

7-1942

# Washington University Medical Alumni Quarterly, July 1942

Follow this and additional works at: [http://digitalcommons.wustl.edu/med\\_alumni\\_quarterly](http://digitalcommons.wustl.edu/med_alumni_quarterly)

---

## Recommended Citation

Washington University Medical Alumni Quarterly, July 1942. Bernard Becker Medical Library Archives. Washington University School of Medicine, Saint Louis, Missouri. [http://digitalcommons.wustl.edu/med\\_alumni\\_quarterly/19](http://digitalcommons.wustl.edu/med_alumni_quarterly/19)

This Article is brought to you for free and open access by the Washington University Publications at Digital Commons@Becker. It has been accepted for inclusion in Washington University Medical Alumni Quarterly by an authorized administrator of Digital Commons@Becker. For more information, please contact [engeszer@wustl.edu](mailto:engeszer@wustl.edu).

*The*  
WASHINGTON UNIVERSITY  
MEDICAL ALUMNI  
QUARTERLY



PUBLISHED IN THE INTEREST OF  
THE UNIVERSITY AND THE ALUMNI

+++++

The Heart That Is Growing Old

++

Recent Developments in Gastric Surgical Pathology

++

Epochs in the Life of a Medical Student

++

The Quarantine

++

Dr. Joseph Nash McDowell

++++++

Vol. V

JULY, 1942

No. 4



## **OFFICERS OF THE ALUMNI ASSOCIATION OF WASHINGTON UNIVERSITY SCHOOL OF MEDICINE**

President: Dr. Charles A. Stone, '08  
Vice-President: Dr. Theodore P. Brookes, '09  
Vice-President: Dr. Leslie C. Drews, '29  
Secretary-Treasurer: Dr. James W. Bagby, '33  
Acting Secretary - Treasurer: Dr. Rogers Deakin

### **Executive Committee**

Term Expires 1943	Term Expires 1944	Term Expires 1945
Dr. William Berman	Dr. William G. Becke	Dr. V. P. Blair
Dr. Curtis Lohr	Dr. Thomas M. Davis	Dr. Lee B. Harrison
Dr. F. E. Woodruff	Dr. George J. L. Wulff	Dr. Theodore Hanser
Dr. M. F. Arbuckle	Dr. Claude Pickrell	Dr. Louis H. Jorstad

---

### **EDITORIAL BOARD**

#### **WASHINGTON UNIVERSITY MEDICAL ALUMNI QUARTERLY**

##### **Representing the University:**

Dr. Robert J. Terry, '95  
Dr. Alexis Hartmann, '21  
Dr. Robert Elliott, '36

##### **Representing the Alumni:**

Dr. Louis H. Jorstad, '24  
Dr. James W. Bagby, '33  
Dr. Leo Wade, '38

Dr. Robert A. Moore, Editor-in-Chief  
Dr. Jane Erganian, '41, Associate Editor  
Dr. Sam Martin, '41, Associate Editor

---

Office of the Washington University Medical Alumni Quarterly, 602 South Euclid  
Avenue, St. Louis, Missouri

---

Published quarterly by Washington University, St. Louis, Mo. Entered  
as second class matter December 14, 1937 at the Post Office at St. Louis,  
Mo. under the act of August 24, 1912.



# The Washington University Medical Alumni Quarterly

---

VOL. 5

JULY, 1942

No. 4

---

## The Heart That Is Growing Old<sup>1</sup>

JOHN MUSSER<sup>2</sup>

In the past 100 years there has been a marked extension of life expectancy. In 1850, Dublin has shown that more than half of the people of this country were under 20 years of age; that in the regular census of each decade the percentage has gradually fallen so that in 1900 the younger group represented slightly under 45 per cent of the population; in 1930 they were 39 per cent and in the census figures recently released the percentage of young people to the population as a whole has dropped to 36.7 per cent. It is obvious why this percentage of young people has dropped. The mother of the child is watched over carefully and given prenatal care. After the infant is born, postnatal care is assiduous and attentive. Personal hygienic measures have been instituted and are being followed which make for a relatively sound and sensible way of living. Public health measures have been of inestimable value in controlling the epidemics of contagious and infectious diseases. The campaign against tuberculosis has resulted in a marked decline in the death rate from this once scourge. The institution of chemotherapeutic agents capable of curing the most prevalent of all infectious diseases, syphilis, has brought about a material decline in the deaths from the late effects of this disease. It is too early yet to state that chemotherapy of the last few years will have statistical significance in the reduction of the number of deaths per year from infectious diseases, but this undoubtedly will be true. Chemotherapy will mean an additional factor responsible for prolonging life's span. Other therapeutic measures, the use of insulin and other glandular products, the achievements of sur-

---

<sup>1</sup> Presented as the annual Leo Loeb Lecture of the Phi Beta Pi Fraternity at Washington University School of Medicine on March 23, 1942.

<sup>2</sup> Professor of Medicine, Tulane University School of Medicine, New Orleans, Louisiana.

Reprinted in part with permission from the Transactions of the College of Physicians of Philadelphia.



gery, the more prompt and early diagnosis of disease, all also play an important role in life's drama; the actors are becoming aged; they would have made their final exit at an early age had they lived 100 years ago.

As a corollary that as the percentage of young people dropped, the percentage of old people showed a marked increase, old people who have passed the age of 65. In 1850, 2.6 per cent of the population obtained this age, in 1900 it was 4.1 per cent and in 1930 the percentage was approximately 6. It has been estimated that by 1980 at least 15 per cent of the total people of this country will have reached or passed the age of 65, twenty-two million people approximately, instead of the three million of 40 years ago.

A hundred years ago people were dying of infectious diseases, of diabetes, cancer; nowadays they die as result of degenerative changes that are a natural evolution in the life of any animal. These degenerative changes, as all doctors and the educated, well informed laity know, involve chiefly the cardiovascular system, essentially the vascular system but with expressions at the time of death which may be primarily in the heart or the kidney or the vessels of the brain. Again to quote Dublin, who shows that a child at its birth will have 45 chances in 100 of dying because of cardiovascular renal disease; a man at the age of 30 will have 52 chances in 100 of dying as result of vascular disease; if that man reaches the age of 60 the likelihood of death from this cause is as 6 is to 10. The vascular disease, when associated with hypertension, will produce death from cardiac failure or coronary occlusion in 60 per cent of instances. Twenty-five per cent of the hypertensive individuals will expire as result of cerebral vascular accidents, 5 per cent on account of uremia and 5 per cent of a combination of heart and kidney disease when it is often impossible to state which is the primary cause of death, and the other 5 per cent will gradually wear out with what has been termed general visceral failure. Arteriosclerotic heart disease and hypertensive heart disease are responsible for the greater number of deaths of the old individual. The heart is of chief importance in the list of causes of death, possibly statistically accentuated because a heart lesion is relatively easy to diagnose; instruments of precision have been evolved to study the organ, which study can be done more readily than is the case in any other of the viscera. Another factor may play a part, bringing the figures of death from heart disease to the top of all causes of death is because that the practitioner often does not know positively just what is the matter with the patient and what is the cause of death, so that a diagnosis of one or another form of heart disease is least open to criticism in the absence of unequivocal physical signs and definite diagnostic criteria.



Despite what has just been said about mistakes in diagnosis and the ready availability of methods of diagnosis of heart diseases, the fact remains that heart disease ranks first as a cause of death. As the older people are when they die and as age expectancy advances, it is heart disease which will cause the greatest number of deaths. Because of what has been said in regard to people growing older in larger numbers, and the actual number of old persons increases, it behooves the student and the practitioner to consider seriously the importance of the care of the old and the aged and more particularly the care of the heart that is ageing. Parenthetically it might be observed that geriatrics as a science is receiving ever increasing attention and is of growing importance. It is quite within the realms of possibility that within the next twenty-five years, certainly within the next fifty years, as a specialty geriatrics may obtain the importance that the specialty of pediatrics now has in the field of medicine. The geriatrician will become the conservator of the health of the ancient; he will have learned to recognize the early signs and expressions of degenerative disease; he will make periodic diagnostic check-ups of his clientele; he will advise, instruct and guide in the modes of living, in proper hygiene, in adequate feeding and in many other details which will tend to minimize or obliterate the conditions which might and will induce disease. As Cannon, in a recent address delivered at Stanford University, makes clear—"the advantages to be derived from securing health and physiologic efficiency instead of being repaired after a breakdown need to be emphasized." It will be the job of the geriatrician to prevent "breakdowns" in the wearing out organism, just as it is the duty of the pediatrician to prevent diphtheria and whooping cough.

### Factors in Ageing

Probably the one most fundamental cause of ageing lies in the arterial tree. Winternitz and his associates state that "the cause of arteriosclerosis is probably not to be found in a single factor . . . recognition of the artery as a vascular or potentially vascular organ, and therefore subject to the same pathological processes to which other tissues are subject, may prove more fruitful than one in which the lesions are regarded as primarily "degenerative" or as the inevitable concomitants of age." Cohn, in dissenting from this point of view questions—"May not the inevitable concomitants of age be vascular change?"

Be that as it may, there are clearly recognized and inevitably discussed factors, many and varied, which are held to be responsible for an individual living to advanced age or dying at an early one. To no one of these factors can there be attributed a supremacy, any one of them may play a great or a minor part. Some of them may be called positive, they are there and



nothing can be done about them. Others may be called negative; they may never be present in the life of an individual because he has kept them out of his life deliberately. To be discussed are: (1) heritage; (2) economic status; (3) geographic locality; (4) marital state; (5) previous illness; (6) endocrines, and (7) tobacco and liquor.

Heritage: Among the many pithy sayings of Oliver Wendell Holmes is that one attributed to him wherein he states—to live to an old age pick your ancestors. The factor of heritage undoubtedly is considered to be the most important in accounting for longevity in an individual. Again and again numerous physicians have seen families whose members have lived to the eighth or ninth decade of life and who, when they were even at a relatively advanced age were biologically younger than members of another family who had not reached an age at least twenty-five years younger than the first family. There is, without question, passed through the genes a tendency to arteriosclerosis which inheritance will condemn more people to an early death than probably any other single cause. Fortunate indeed is the individual who has ancestors whose arteries did not develop the degenerative changes of old age until late in life. Such an individual will live to an old age if he is not an unfortunate victim of another hereditary disease, cancer, or if he survives a most frequent cause of death, automobile accidents, or if pneumonia does not supervene. The body habitus in these people is often of a distinct type. They are lean and often tall. However, such a bodily build does not necessarily imply that a person will live to an old age, nor is the contrary true. The Flexners, in their delightful biography of Dr. William Welch, state that he was short and rotund and that his midriff was circular in diameter, yet Dr. Welch was vigorously active physically, mentally alert intellectually, when the cancer developed which caused his death when well into his eighties. Certainly he is an example of the fact that generalities are often untrue, at least in part.

Economic status enjoys minor importance. It is to be anticipated that a man who is financially comfortable, who can always have an ample and adequate diet, who is not obliged by economic forces to live in close contact with his fellowmen, is going to have a greater chance of living to an old age than is he who has to undergo the vicissitudes of a difficult, poverty lived life.

Geographic locality seems to have some bearing on whether or not a person lives to advanced age. It has been shown that the residents of the eastern seaboard do not live as long as those in the midwest. This is probably explained by the fact that the busy, hustling, active, concentrated life of the big cities in the East is not as conducive to longevity as is the peaceful, free from strain existence of the man who works in the prairies



of the midwest. As Pearl explains it "the length of life is generally in inverse proportion to the rate of living." The East is essentially urban, the midwest rural. In the tropics and subtropics, diseases of the arteries are not as common nor as prevalent as in the temperate zone. Here again Pearl's explanation holds good. It is not the direct effect of heat on body mechanisms but the heat itself does not allow an individual to live at a swift pace. The daily rise of temperature to high proportions definitely inhibits a person's activities. Life is, of necessity, calm and placid. Furthermore, the population is made up to a greater extent of people who live in rural districts than in the temperate zones where there are large collections of people in innumerable civic communities.

In so far as the marital status of an individual is concerned, it may be said that the married man or woman outlives his or her bachelor or maiden friend. The comparatively few years that are added by marriage to the possibility of longevity are probably statistically of no special significance. One might become facetious and express the opinion that if the factors of peace and calm which are supposedly responsible for people living longer in the tropics are true, they would be negated by the factor of the marital state. It is questionable if the life of married individuals is calmer and more placid than that of the unmarried, with their freedom from marital worries.

It is perfectly obvious that previous illness is of extreme importance. The man who is subjected to many illnesses in the course of his early life, will probably die sooner than will the man who is not susceptible to infections of various types. One illness alone may be responsible for materially abbreviating the life cycle. An outstanding example of course is the child who has rheumatic fever and who will die at an early age from rheumatic heart disease. The individual who has the misfortune to contract syphilis almost surely will expire earlier in life than if he had not had this type of infection. The inadequately treated syphilitic patient, in a goodly proportion of instances, will die at a relatively early age as result of cardiovascular or cerebrospinal syphilis, or one or another of the tertiary manifestations of the disease. Early and midlife infections, of many and varied types, undoubtedly play an important role in the production of vascular disease. Winternitz, amongst some pathologists, contends that there is distinct "evidence for possible infectious basis for arteriosclerosis." This is an old concept recently revived by Winternitz and based on the finding of micro-organisms at times in arteriosclerotic plaques.

Imbalance or functional disturbances or diseases of the endocrines are not conducive to prolonged life. Such disturbances bring about elevation of blood pressure; some of them may result in primary heart disease, as



the thyroid heart. Some may result in obesity with its well known tendency to shorten life; some may bring about metabolic disorders or high blood sugar or what not, and some of them result entirely in the dispositional changes which may accompany or be associated with endocrinologic pathology.

The physician, the preacher and the populace as a whole have for many years debated the effect of alcohol and tobacco on the bodily functions. Certainly the totality of evidence incriminating tobacco and nicotine in predisposing to cardiovascular disease is decidedly more definite than the limited evidence that would tend to show that tobacco smoking has little effect on the vascular system. The statements of the proponents of the evils of tobacco smoking may be discounted to a certain degree by stating that not only do the great majority of the population of this country smoke, women as well as men, but that vascular disease amongst women is much less frequent than in males. Personally I do not feel that moderate smoking is in any way harmful. Excesses of any kind, from overindulgence in tobacco and overactivity at the table, to fits of rage and anger probably have a tendency to shorten the individual's life. In so far as alcohol is concerned, again excesses may be harmful but when used moderately, particularly in the latter years of life, I believe that alcohol is beneficial to the individual. The anteprendial high ball or cocktail sipped quietly and imbibed when thoroughly relaxed from the day's strain, quiets psychically and at the same time probably exerts a dilatory effect on the blood vessels.

Pearl studied the social history of some 2000 nonagenarians and octogenarians; some of these subjects of study used alcohol, some were abstainers; some smoked, some did not; some ate to excess, others were restrained in their food intake. The only characteristic that Pearl found common to all of this group was a placid and calm disposition. These old folk took things easily in their stride as they came along; they did not let the problems of life and living disturb them unduly. Parenthetically it might be noted that Winternitz has written that "perhaps no one thing has done more to inhibit investigations in the field of arteriosclerosis than the established notion that it is one of the unfortunate accompaniments of old age, about which nothing more can be done than to suggest that the individual reach his old age through living in a socially desirable manner."

I have discussed ageing and the causes productive of premature old age to the apparent exclusion of the titular subject of this paper. I believe these preliminary remarks are germane because after all the heart is one of the earliest organs in the body to feel the effect of the ageing processes. The question might well be asked, what is old age? It is a relative term.



In contemporary life it is usually considered past 70, although the man of 70 may be chronologically older than the man of 55, but biologically younger. In countries or in ages where and when the life span was relatively short, a man of 40 would be considered as an older statesman.

Wissler writes that in the Incan empire of pre-Columbian Peru there existed an all-embracing age classification of the male population. A man between the ages of 50-60 was half old, after 60 he was listed as "old man sleeping" privileged to spend his declining year in rest and slumber, after 50 the male stopped paying taxes. To many of us in this day and time the specter of old age would be less terrifying were we excused from paying income, property and luxury taxes when we reached midlife.

As man ages his blood vessels, some to a greater extent than others, undergo involutionary changes which are known as sclerotic, it should be recognized that there is a difference in biologic age of blood vessels throughout the body. The anterior descending branch of the coronary artery matures earlier than do most arteries; as a living structure it is one of the older arteries of the body. This fact is of aid in explaining why this particular vessel is somewhat more likely to become occluded or to rupture than are other branches of the coronary or other blood vessels throughout the body. The intimal notably, and to a lesser extent the medial, changes of advancing years are far more advanced in the coronary vessels than in the radial arteries. The coronary arteries only exceptionally show medial calcification (Mönckeberg's sclerosis), a characteristic late-life feature of the muscular and not of the elastic arteries.

The heart, unlike other muscular tissue in the body, increases in size and weight as the individual advances in years. This is quite unlike other muscular structures, which waste in ageing; consequently the heart weight-body weight ratio decreases as the individual becomes older. As the organ ages its valves begin to show the effect of time, gradually their elasticity and pliability are lost. Fibrotic changes ensue so they become rigid and less readily do they approximate in systole or diastole. These valve changes are more pronounced in the left heart than the right. The consumption of oxygen per unit of muscle weight decreases with advancing age, suggesting "essential changes in the constitution of muscle with time" (Cohn).

As the years pass by, the blood pressure gradually increases but not to the high figures that the laity and sometimes the medical profession misconstrue as the figures for a person who is past the age of, say 60. Willis studied a group of patients over 75 and observed that in the majority of subjects the blood pressure was between 150-160 systolic and diastolic was between 80-90. Many old people have blood pressure which is substantially lower than these figures. Normally the blood pressure should not be higher



than 150 mm. of mercury systolic, with a diastolic that does not change materially from that of middle life, that is, of course, assuming that the individual does not have some other cause (e. g., endocrine) to produce an elevation of blood pressure. By the sixth decade of life the ultimate figures for blood pressure are obtained and from thence on it remains unchanged unless some intercurrent disorder or disease develops.

The heart rate after birth slowly declines during the first decade of life. By the time a man is 30 years of age the rate is fairly well established for that individual and it so remains until the fifth decade when, according to Warthin, the rate falls slowly to 60 per minute. Gilbert has shown that pressure on the vagus (now known to be the carotid sinus) has an increased effect with increasing age, the heart is more and more slowed by neck pressure and more and more prolonged becomes the conduction rate from the auricle to ventricle. In late life the atropine-increase effect on the heart rate becomes less and less. The pulse rate in the response to the exercise test is more rapid and more prolonged than in youth, of course excluding trained subjects. The rhythm of the heart has been accepted as one of the important criteria of muscular or neuromuscular changes in the organ. Alterations in the rhythm will be discussed briefly in the presentation of the electrocardiogram of old people. Briefly, it might be stated as age advances ectopics become more common, heart block may appear, transient attacks of fibrillation may occur or the heart may fibrillate permanently without the patient showing evidence of heart failure, at least sometimes for many years.

### Subjective Symptoms

It is my belief that the subjective symptoms produced by the ageing heart are of greater value than any other one method of determining the efficiency of the heart muscle. The first evidence that the heart is beginning to "tire" easily and cannot respond to physical calls and demands as it did in previous years, is the feelings of the patient. Ease of fatigue is about as important as any other one symptom. Tiring under circumstances which would not have previously exhausted the patient is a prime symptom. Christian has stressed the importance of this expression of heart tire. It is remarkable how quickly fatigue develops with mechanistic cardiac defects. The man who has paroxysmal fibrillation will almost promptly, as the fibrillation develops, become almost overcome with fatigue. He will be worn out and done up and then if the paroxysm ceases in a comparatively few minutes he will come back to his previous state of normal vigor.

Dyspnea as a subjective symptom is invariably and rightly stressed. The intern never forgets to ask the patient if he becomes short of breath on



slight exertion but the same intern will rarely question the patient as to whether or not he becomes tired on slight exertion.

Anginal pain is another subjective phenomenon which is of extreme importance and definitely an indication for the cessation of any muscular or mental activity which is severe enough to bring on discomfort or even agony.

Premature contractions occasion greater psychical distress than they do cardiac. The patient is conscious of his heart, it disturbs and irritates him when he notices as he describes it—the heart stopping momentarily, or turning over or jumping or what not. Ectopics suggest a reduction of mental activity of the individual, rather than physical. Cough is an important subjective symptom but one of severe rather than of minimal and early heart failure. As the cardiac reserve diminishes, breathlessness, sub-sternal tightness on exertion, definite fatiguability become symptoms of greater importance than the objective and instrumental findings.

### **The Physical Examination**

As age progresses the bony thorax, through calcification of the costal cartilages, becomes more or less fixed; a certain degree of emphysema develops. Both of these abnormalities make it difficult accurately to outline the heart by percussion. Nowadays unfortunately this is really of minimal importance because the routine two meter x-ray plate to determine the heart's size is a universally accepted procedure. In auscultating over the precordium the physician often states that the heart sounds are "weak and distant." Actually the heart sounds may be distant but they give only the impression of being weak. The explanation is simple and elementary. The emphysematous lung overlies the heart, the chest has become rounded, the transverse diameter is greater in the older person so that the sounds actually are more distant from the bell of the stethoscope than in the younger individual, giving the impression of being weak and actually being relatively distant. Accentuation of the aortic second sound is likely to make its appearance after the age of 40. This may not be true accentuation but at least the aortic second sound is louder and clearer than is the pulmonary second which characteristically is the louder and clearer second sound, at least until the age of 30. Systolic murmurs over the base or apex are common and of very little prognostic significance. They represent sclerosis of the valves or they may be dependent upon atheromatous plaques near the aortic valve openings. More definite and more obvious physical signs may develop as result of arteriosclerosis and hypertension. Arteriosclerotic heart disease in older people is, of course, common and depends primarily upon sclerosis of the coronary vessels. It often is associated with



hypertensive heart disease. The two etiologic classifications, arteriosclerotic and hypertensive heart disease, are so closely correlated and interwoven that many physicians employ the term hypertensive arteriosclerotic heart disease when hypertension is present; arteriosclerotic heart disease only when hypertension is not outstanding.

### **The Electrocardiogram**

The electrocardiogram in older people has been fairly extensively studied. Several recent papers deserve mention, that of Willius in 1931, a more recent one by Levitt in 1939, and Eliaser and Kondo in 1941. The electrocardiographic reports have to do with old people past the age of 70. Certain electrocardiographic changes occur in old age which are so commonly present that they might be well considered as normal for this age group, according to Eliaser and Kondo. Outstanding are left axis deviation, low voltage, sinus bradycardia, certain conduction defects and variations in the T wave in any and all leads.

In the present study I have selected all patients past the age of 50 who had electrocardiograms taken in the Heart Station of the Hutchinson Memorial Clinic at Tulane. I have taken these patients irrespective of whether or not they were supposed to have heart disease. There were 680 in all and of these roughly about a half had heart disease, hypertension or arteriosclerosis. I am presenting this group as a whole, irrespective of whether or not they had heart disease, because they represent very much what a physician would meet with in his office; they were all ambulatory patients. I will not analyze them in detail. Ectopics were not nearly as common as one would expect; only 18.7 per cent of the patients had this mechanistic abnormality. Conduction disturbances were rather unusual; a well marked sinus bradycardia was present in only 3.4 per cent. Left axis deviation was present in two-thirds of the patients. Other electrocardiographic abnormalities will not be recounted as they were of technical rather than of clinical significance.

### **Management**

The management of the aged man or woman whose heart has given subjective or objective evidence of diminished efficiency fundamentally is comparable to that of the care of any person growing old, with accent on those factors which may produce sudden or gradual heart strain. Fortunately, as Willius wisely and succinctly stated in discussing the treatment of the aged heart, "the general biologic processes of senescence often prove to be a subtle mechanism of self-preservation." The older man unconsciously slows down in his activities. He does not tend to force himself as he did in midlife and the tempo of living becomes calm and more peaceful



than is the strife of midlife. Often the self-imposed restraint is not carried sufficiently far. The physician may have to advise further restrictions of physical and psychical activities. Physical and mental rest are of extreme importance. Muscular rest should be systematically regulated and definitely controlled in the man who has shown evidence of heart tire until it becomes with him a matter of routine and habit. Rest after meals, when the blood pools in the splanchnic area, is of great importance. Half an hour reading the newspaper after breakfast, a short nap after lunch and complete relaxation after dinner in a comfortable armchair, often with a little nap thrown in, is of extreme value to the older man. The rest in the middle of the day after a light lunch should be for at least an hour. If it is impossible always to get the rest, patients should be advised never to engage in physical exercise immediately after eating. The coronary circulation is increased postprandially and for the short period after the ingestion of food no additional strain should be thrown on the coronary vessels. Proof of the necessity of such restriction is substantiated by the common occurrence of coronary accidents a short time after eating.

Physical and mental effort which bring about anginal-like discomfort or continued anginal pain, should be avoided. The potential or actual heart patient of midlife and past must learn to live within his limitations. It is rather extraordinary how physical measures which occasion pleasure may not produce the pain of angina, whereas those which are no more severe than the former and which are not associated with pleasure and enjoyment may bring about the chest pain of exertion.

The patient should be advised to obtain six to eight hours of sleep each night. It is not the part of good advice to recommend to the older patient to stay in bed many hours at any one time. The dynamics of the circulation are such that the supine position should not be assumed much more than the six to eight hours just mentioned. Let him stay in bed approximately seven hours and then the additional rest and the supplementary sleep may be obtained in a midday sleep or late afternoon nap. Restlessness and insomnia can be controlled by small doses of phenobarbital or the old fashioned chloral hydrate if the patient has difficulty in falling asleep when he first goes to bed.

Rest for a man who is unable to give up his daily occupation, who has not yet obtained retiring age and who occupies a salaried position is, of course, an extremely difficult problem. For these patients it is advisable to have them spend Sunday in bed or loafing around the bedroom in a bathrobe completely dissociated from their daily activities; resting and relaxing for this period of 24 hours. When cautioning the patient about rest it should be remembered that there are certain physiologic functions



of man which are entirely comparable to physical exertion. Straining at stool is an example, sexual excitement or sexual intercourse with the resultant orgasm should be reduced to a minimum or completely abolished. Emotional excitement of any kind is harmful. Emotional excitement may be brought about by the stand on the five yard line in an important football game of the alumnus' Alma Mater. It is said that every World Series baseball game is accompanied by the death of a certain number of onlookers who, in the excitement of the occasion, have had a coronary occlusion or cerebral hemorrhage or some comparable vascular accident. I presume that at the Kentucky Derby or the Santa Anita Handicap the same sequence of events may occur—great excitement, increased vascular tension, ruptured artery. If the man with relatively efficient heart function has some physical hobby or recreation which he enjoys and which gives him pleasure, do not make him stop in toto but let him reduce the amount of exercise that he does. He can eliminate the last four or five or even nine holes of golf in his weekly golf game; his work in the garden can be stopped when he has learned that fatigue may ensue and heart discomfort if he continues a longer time. It is not the part of good sense to change extensively a plan of living which the older person has gradually evolved over a period of years. Do not ask this patient whom we are discussing to give up the things in which he is interested; let him reduce but not eliminate. The person past midlife who has a hobby is fortunate and doubly happy is the man whose hobby is a household one rather than outdoor. The man whose avocation has been shooting, hunting, fishing, golf and other sports which require physical effort will sooner or later find that the time will come when he can no longer engage actively in these recreations, whereas the man who collects stamps, who works in a machine shop in his basement or is interested in old prints or is a bibliophile can probably continue with his indoor hobby until death. The older person who can be occupied is much better able to withstand the vicissitudes of time and to avoid the morbid outlook of old age than is he whose life has been centered entirely around his business or professional activities. Retirement, for such as he, is often a signal for a rapid physical decline. Happy is the man who is his own boss, as is the professional man in theory. Fortunate is he who can cut down on the work he does as an employee without having to give up entirely his occupation. The elderly man who can keep occupied for a period of the day at least in the business that he has carried on for years is not going to break suddenly but to wear out slowly.

The eating and drinking habits of the older man must be taken into consideration. A quantitative rather than a qualitative reduction in food intake is essential. If physical activities are diminished sometimes the older



person gains weight and then also there is always the ever present tendency to overeating when there is not much else to do. Fortunately nature takes care of this problem to a greater or lesser extent. It is unusual for a man past the age of 60 to increase his weight markedly. The weight curve usually becomes stabilized a decade earlier than this. The heaviest meal should be partaken in the middle of the day, succeeded by rest and a nap. The nocturnal repast should be light. A glass of milk with a few sweet crackers before retiring may ensure prompt sleep and a restful night.

It is my belief that a glass or two of wine with the evening meal or a cocktail or high ball on returning from work in the evening before dinner, is relaxing, enjoyable and beneficial. If a man has been a steady consumer of alcohol all of his adult life there is not much use in trying materially to reduce his alcohol intake. By the time he is approaching senescence and has not been hurt by alcohol it probably will do him no harm at that time. It is not advisable to break life-long habits, even when in theory they may be deleterious. This applies both to the smoking and the drinking habits.

Robbins writes most intelligently when he says that "the treatment of the aged is one that calls for tact, sympathy and consideration on the part of a physician to the patient." Do not try to be too bossy as to the man or woman's living habits or too dogmatic in laying down the law as to the manner in which they should exist. Give your advice in homeopathic doses. Slowly but gradually inculcate in the mind of the man whose heart has begun to show early signs of failure that he cannot do this or he cannot do that. Antagonism rather than cooperation may be the result of telling a man, who has had a busy and active life, out of a clear sky that he cannot do that, cannot do this or he cannot do something else which he has done all his life. The average man and to a lesser extent the average woman resents getting old and he dislikes being told just what he must do, how he should do it and being reminded that he cannot do many things that he had done previously. Go about giving such advice gradually, with tact, with sympathy and with consideration.

Drugs should have a minor part in the care of the ageing heart. Treatment should be physical rather than medicinal. However, if heart failure has ensued or early heart strain has evidenced itself, then digitalis may be advisable. On the whole, however, digitalis is not indicated in the small doses which are so frequently given, more or less on general principles. I would call attention to the well known fact that auricular fibrillation is very common in the old people who develop pneumonia. To the older person who has this particular respiratory tract infection it is advisable to start digitalis immediately so that if necessity arises he can be digitalized promptly and at once. Hyperthyroidism developing in a person after the



age of 45 is also likely to be followed by auricular fibrillation or rather associated with it. Here again is an indication for digitalis in an elderly person, particularly if quinidine will not control the heart irregularity. If there is definite anginal pain on exertion or if the pain is not particularly pronounced or even merely suggestive, nitroglycerine should be given to control the symptom. For the high-strung, mentally keenly active hypertensive individual who so frequently has insomnia, phenobarbital morning and night in doses of 0.032 gram is helpful. For this type of person with hypertension I make no attempt to combat the hypertension per se with drugs that are supposed to reduce blood pressure. I usually employ sedatives only and give either one or another of the barbiturates or the old fashioned mixture of chloral hydrate, sodium bromide and peppermint water. If there is definite evidence of coronary disease, in order continuously to increase coronary flow, I give one or another of the theobromine preparations, preferably theocalcin because it is less irritating to the stomach. I continue with this drug indefinitely and usually tell my patients they are wedded to it for the rest of life. Theominal is another excellent preparation for the keen, keyed up nervous type but I prefer to give the phenobarbital alone so that I can modify the dose as needed. Aminophyllin is certainly a splendid drug for the patient who has from time to time coronary pain and whose coronaries are probably sclerotic and constricted. Any of these xanthine preparations are definitely indicated in the treatment of the man who has had the warning signals or who has previously had mild coronary occlusion. In conjunction with the latter I would like to digress a minute to speak about the use of morphine in an acute coronary attack. It is often necessary to give this drug in order to control the pain, and to give it in large doses, but it is not an ideal drug for the purpose. It sensitizes the vagus and increases coronary constriction. If the pain is not especially severe, or as soon as it becomes ameliorated to a certain extent by the morphine, replace this drug with papaverine 0.032 to 0.065 gram as needed. With the morphine incidentally, atropine should be combined, as it to a certain degree counteracts the effect of the morphine on the vagus.

### Summary

I have presented to you this evening some facts concerning the heart as man approaches senescence. I have discussed the symptoms, the physical examination, the electrocardiographic findings of the older patient whose heart is beginning to show evidence of age. I have given to you my ideas about the treatment of these individuals. Tact, moderation, common sense should be the passwords. Guide the elderly individual gently and firmly.



Do not let him overdo in any way, physical, mental or gustatory. Above all do not be too solicitous for fear he may become introspective and unhappy in the fading years of life.

### References

- Dublin, Louis I.: Longevity in retrospect and in prospect (In Problems of Ageing, by E. V. Cowdry, Baltimore, Williams & Wilkins Co., 1939).
- Cannon, W. B.: Problems confronting medical investigators. *Science*, 94:172, 1941.
- Christian, Henry A.: Speculations on some problems of cardiac failure. *South. Med. J.*, 20:28, 1927.
- Cohn, Alfred: Cardiovascular system and blood (In Problems of Ageing, by E. V. Cowdry, Baltimore, Williams & Wilkins Co., 1939).
- Eliaser, M. and Kondo, B. O.: Electrocardiogram in later life. *Arch. Int. Med.*, 67:637, 1941.
- Gilbert, N.: The increase of certain vagal effects with increased age. *Arch. Int. Med.*, 31:423, 1923.
- Hyman, A. S., and Parsonnet, A. E.: *The Failing Heart of Middle Life*. Philadelphia, F. A. Davis Co., 1933.
- Levitt, G.: The electrocardiogram in the aged. *Am. Heart J.*, 18:692, 1939.
- Robbins, I. L.: A general discussion of the problems of old age. *New Orleans M. & S. J.*, 93:184, 1940.
- Sappington, S. W., and Cook, H. S.: Radial artery changes in comparison with those of coronary and other arteries. *Am. J. Med. Sci.*, 192:822, 1936.
- Warthin, A. S.: *Old Age*. Paul B. Hoeber, Inc., New York, 1929.
- Willius, F. A.: The Management and treatment of the heart in senescence. *Med. Clin. N. A.*, 21:755, 1937.
- Willius, F. A.: The heart in old age. *Am. J. Med. Sci.* 182:1, 1931.
- Winternitz, M. C.: *The Biology of Arteriosclerosis*. Charles C. Thomas, Springfield, Ill., 1938.
- Wissler, C.: Human Cultural Levels (In Problems of Ageing by E. V. Cowdry, Baltimore, Williams & Wilkins Co., 1939.)

---

The Treatment of Staphylococcal Infections of the Eye by Immunization with Toxoid. L. A. Julianelle, R. H. Boots, and G. H. Harrison: *Am. J. Ophth.*, Vol. 25: 431-436, April, 1942.

Therapy of chronic conjunctivitis in 30 patients was attempted on the basis that staphylococcus elaborates toxins capable of causing tissue destruction and neutralization of such toxin would render it innocuous. The study is on the effect of immunization with toxoid. The organism isolated from each patient was identified as pathogenic. Although the serum of each patient underwent a rise in antitoxin by the end of the immunization, cultures remained virulent through the period of observation and 20 patients gave no evidence of change in the presenting organic complaint. The conclusion from this study is that toxoid immunization does not provide an effective method of treating staphylococcal infections of the eye.



## Recent Developments in Gastric Surgical Pathology<sup>1</sup>

ARTHUR PURDY STOUT, M.D.<sup>2</sup>

When I was a medical student at Columbia University, some thirty-two years ago, I remember very well a Clinic given by the late Dr. Theodore Janeway, who at that time was Professor of Medicine at Columbia, and who later occupied the same post at Johns Hopkins University. He showed us an emaciated man with visible gastric peristalsis, a large epigastric mass, and achylia gastrica. This, said Dr. Janeway, was a characteristic case of gastric cancer. The diagnosis was easy even without the aid of x-ray, which was in its infancy in 1910, but nothing could be done to cure it. In similar fashion we were shown cases of gastric and duodenal ulcer with high acidity and pain coming on at definite periods relieved by food and soda. These ulcers were to be treated by diet, and surgery was to be used only to close an acute perforation or to short circuit the food in pyloric obstruction.

Thus we graduated with the definite impression that gastric cancer was a common incurable disease easily recognized by its physical signs and that peptic ulcers were equally easy to recognize by their symptoms, which were quite different from cancer. We had no idea that in their early stages the two could be easily confused; and if we knew that loss of appetite was an early symptom of cancer, we paid no attention to it because of the very generally held idea that gastric cancer was incurable.

We have come a long way since those days, and our ideas have changed. Among other things we have learned that gastroenterostomy is a faulty operation from the physiological viewpoint because the jejunal mucosa is not designed to withstand the irritation of the highly acid gastric juice and that not only are peptic ulcers not cured by the procedure but that frequently new ones are formed in the jejunum. We know that if ulcers cannot be cured by medical and psychological therapy we must remove most of the acid-secreting portion of the stomach. And surgeons have convinced physicians that this procedure can be done with such a low operative mortality and such a high percentage of good results that the risk of operation is less than the risk of doing nothing. Most of all has the viewpoint changed in regard to gastric cancer. Whereas in the past

---

<sup>1</sup> Presented as the annual Alpha Omega Alpha Lecture at the Washington University School of Medicine on April 30, 1942.

<sup>2</sup> Associate Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York, N. Y.



attempts to cure gastric cancer by gastrectomy resulted in such a high operative mortality and such a low salvage rate, that few physicians were willing to turn their stomach cancer patients over to surgeons, now there is a small but definite salvage rate for gastrectomy in cancer, and it is definitely on the increase. The reasons for this are, I believe, an understanding of shock and methods for combating it, the use of tubes to relieve ileus, improvement in anaesthesia and operative technic and an understanding of the causes of wound disruption and methods of combating it.

This demonstration of the possibility of cure in gastric cancer has made the early diagnosis of gastric cancer a thing of great importance, for it is axiomatic that the only cancers which can be cured are those which have not spread or metastasized beyond the limits of excision. This demand for early diagnosis has led to great improvement in existing technical methods of examination and the development of new ones. Contrast meals and examination by fluoroscopy and roentgenogram have reached a very high degree of accuracy and at present are the most reliable methods of diagnosis. But x-ray is still limited so far as the very early diagnosis of cancer is concerned because it will not demonstrate any motility changes until the muscularis mucosae at least is invaded and minute thickenings and erosions of the mucosa do not produce enough alteration in contour to be noticeable.

Good as is the method of diagnosis by x-ray it is not infallible. Recent years have witnessed the introduction of indirect inspection of the lining of the stomach by the gastroscope. This method has led to more accurate diagnosis in some cases and has taught us a great deal about the appearance and color changes of the gastric mucosa in health and disease. But it has the drawbacks of discomfort for the patient and certain technical difficulties which can interfere with its use and so far it has not become, at least in our Clinic, a routine procedure for all cases of gastric disease.

A third method, as yet unpublished, has been developed by one of the former residents at the Presbyterian Hospital—Edmund Goodman by name. It has enough interest and promise to warrant my telling you about it. Goodman, while an interne, was granted leave to spend a year at the physiological laboratory of Barcroft in Cambridge, England. He found that they were attempting to measure the electromotive force across the stomach. Such a force is developed and can be measured but they had not succeeded in finding any substance or procedure which would influence its voltage. Because of the antivivisection laws, animal experimentation is difficult in England, so that Goodman did much experimentation on himself. One electrode is placed in the stomach and the other on the surface of the forearm and these are connected with a drum which records the E. M. F. in millivolts. One day Goodman got hungry while connected with the



recording apparatus and drank a glass of milk. He was both surprised and delighted to observe an immediate rise of E. M. F. of several millivolts. Milk proved to be an ideal substance for experimentation for he found that it was unaffected by peristalsis and acidity and was specific for the stomach. When he returned to New York, he worked with diseased stomachs and found that in cases of gastric ulcer the response to milk was greatly increased, while in gastric cancer there was either no response or a negative one. It is much too soon to say whether or not this method will have as much value in diagnosis as we hope it will. If it does, it may lead to the possibility of making the diagnosis of cancer of the stomach at an earlier phase than can be done by x-ray and gastroscopy.

Working in close cooperation with surgeons, roentgenologists, and gastroscopists, we in the Laboratory of Surgical Pathology have had our attention closely focussed on the morphological study of every stomach which has been surgically removed. This has led us to make certain observations about ulcers, cancers and other lesions, all of which have been made before by others but which will bear repeating because they help us better to understand the similarities and differences between these lesions and also I hope will fix in your minds a picture of cancer of the stomach in its earlier hopeful stages instead of its late and hopeless development.

In order that you may understand what are the present day problems in diagnosis by contrast meal and gastroscopy, I must say a few words about the different ways in which cancer grows in the stomach. Cancer begins in the mucous glands and tends to grow and spread in all directions, namely, into the lumen, along the gastric wall and penetrating deeply through the coats of the stomach. But different cancers tend to grow at a different rate of speed in these various directions and this fact gives rise to the various gross types of stomach cancer. If growth is chiefly into the lumen, it produces the fungating type; if chiefly along the gastric wall in the deeper coats, it is accompanied by great fibrosis and gives rise to the linitis plastica or leather bottle type. A third type tends to penetrate deeply and ulcerate very early which produces the ulcerated cancer. This type may also develop at the margin of a preexisting peptic ulcer. In the late stage of cancers growth takes place in all three directions, and if seen at this time it may no longer be possible to say to which type the growth originally belonged. Until the year 1937, this proved to be a satisfactory method of classifying all of the cancers which we saw. In that year and in all the succeeding ones, we have observed cancers which have pursued a somewhat different method of growth. This consists of a proliferation of cancer cells spreading through the mucosa and submucosa over relatively large areas amounting in one instance to 45 square centimeters



with little or no penetration of the underlying muscle coat. These cases have either been associated with a preceding peptic ulcer or the mucosal involvement has resulted in superficial ulceration. Several of these cases have had multiple areas of mucosal involvement with zones free from cancer between them. Sporadic cases like these have been reported in the past, but never in considerable numbers such as have been found in our group. One naturally assumes that this type of growth must represent an early phase of gastric cancer and that we are seeing them now because heightened interest and improved diagnosis is leading to earlier operations. For reasons which I will not now discuss this explanation is not entirely satisfactory but it probably accounts for some of these cases.

We have compared the types of tumor found in stomachs resected 25 years ago with those found in recent years. The chief difference has been a great proportional increase in the number of ulcerated cancers in recent years. Whereas twenty-five years ago ulcerated cancers formed only 11.7 per cent, in the five year period ending in 1940 they formed 37.3 per cent. This has meant that we are more and more frequently confronted with the necessity of distinguishing between benign and malignant ulcers. I used to think that I could make this distinction in a resected stomach with a fair degree of accuracy. The criteria upon which we depended were as follows: The benign chronic peptic ulcer was generally found on the lesser curvature. It was deep, punched out, and the surrounding mucosa, although it might be reddened from inflammation, usually came right up to the crater and overhung it. The ulcerated cancer, on the other hand, was usually shallower because it did not completely penetrate the muscularis. It was bowl-shaped with shelving edges and the surrounding mucosa was nodular, reddened and often granular. Both benign and malignant ulcers would have a great deal of induration of the gastric wall beneath and around them due to fibrosis. We still retain these criteria because we do not know any more reliable but we no longer rely upon them as accurate. In the first place a peptic ulcer may have an occult cancer in its margins which is not appreciated grossly, and secondly there are some atypical peptic ulcers, which so closely reproduce the gross appearance of cancers that we cannot avoid calling them so, and later finding we are wrong when the histological study is made.

We have learned from experience that differentiation in a gastric carcinoma has little bearing upon its degree of relative malignancy and consequently is of no assistance in prognosis. But the gross characteristics are of considerable importance in prognosis. Fungating tumors without much deep infiltration, ulcerated cancers and cancers developing in peptic ulcers are among the more favorable types, especially if they are superficial



spreading tumors. All of these types are more favorable if there are no regional lymph node metastases found. On the other hand, the linitis plastica type of cancer and all late cancers of no special type have a much less favorable prognosis. Our total five year symptom-free survival rate on all gastrectomies for cancer was about 20 per cent in 1935. This will probably continue to improve slowly because the proportion of early cases is increasing, but it will continue to be rather low because many of our advanced inoperable cases have palliative gastrectomies designed to remove ulcerating obstructing tumors and so make the last months of these unfortunate people more comfortable.

I might spend a good deal of your time discussing the other kinds of tumors which grow in the stomach. They are of much interest to the pathologist but are so rare that one seldom encounters them except in large clinics where many stomach cases are treated. There are two which deserve passing mention; the smooth muscle tumors and lymphosarcomas. The leiomyomas arise in the gastric muscle and form solid nodules which make a smooth projection into the lumen or into the peritoneal cavity or often they do both producing a dumb-bell tumor. They grow slowly and the majority pursue a benign course but a few metastasize to the liver or invade the tissues outside of the stomach. For some reason the endogastric tumors are very prone to ulcerate and give rise to repeated hemorrhages which may be occult or severe.

Lymphosarcomas of the stomach probably arise from submucosal or mucosal lymphoid tissue. They are sometimes suspected by the roentgenologist but diagnosis by this means is made difficult because they grow in such a variety of different ways. Sometimes they form bulky multinodular masses projecting into the lumen; or they may extend along the submucosa producing a diffuse thickening of the mucosal folds; a third type tends to spread through the muscle coat toward the serosa with ulceration and the first indication of such a tumor may be an acute perforation with peritonitis. Finally, they may form disc-shaped mucosal nodules. Although lymphosarcoma is generally a fatal disease when it originates in the gastrointestinal tract there is a five-year cure rate of between 20 and 30 per cent.

There are several other features of gastric pathology which can be regarded as relatively recent additions to knowledge. One of the by-products of chronic peptic ulcer and of antral gastritis without ulcer is frequently recurring spasm of the antral and pyloric muscles. This produces after a time an hypertrophy of these muscles with pyloric narrowing and marked gastric retention even when the ulcer is a long distance from the pylorus. What is perhaps not so well known is that hypertrophy of these muscles can occur in adults without either ulcer or gastritis. When this occurs it



can produce a tumor-like thickening at the pylorus which may be mistaken for cancer.

The whole question of gastritis and its significance has been much discussed in recent years and it has proved a difficult one for the pathologist. Schindler has led the gastroscopists to develop a descriptive nomenclature including the terms hypertrophic and atrophic gastritis. As used by the gastroscopists these describe respectively mucosal thickening and an apparent thinning with white patches through which blood vessels can be seen. When such stomachs are removed and we study their histology, we cannot find a corresponding mucosal thickening or thinning. We do not question the accuracy of their descriptions but we do question whether what they are describing represent hypertrophy and atrophy. Atrophy of the gastric mucosa with a real reduction in the number of mucosal glands and a disappearance of acid-secreting cells occurs in pernicious anemia but it is certainly rare in gastric ulcer and cancer. This leads me also to take exception to the statements of Rhoads who contends that atrophy of the gastric mucosa, especially in pernicious anemia, definitely predisposes to the development of gastric cancer. We have seen many cases of pernicious anemia at the Presbyterian Hospital and also many cases of gastric cancer but in only one patient were they combined.

I should like to conclude with an allusion to the changes which can take place in the stomach in cases of malnutrition and avitaminosis. Ross Golden, Chief of our Department of Roentgenology, has for some years been interested in this subject because these changes in the gastrointestinal tract can easily become confused with other and more serious lesions. Briefly, an insufficient diet can cause edema and thickening of the mucosal folds. In the intestine it can also lead to superficial ulcerations. I should like to demonstrate this lesion in a case in which the changes were so marked that they led to a diagnosis of cancer and resection of the stomach:

The patient was a 62 year old man, who had all his teeth extracted five months previously. The combination of no appetite and no teeth led to an extremely small and deficient diet with loss of 15 lbs. weight and epigastric pains. There was no free HCl and a barium meal showed marked exaggeration of the mucosal folds and what was interpreted as a polypoid tumor in the antrum, on the posterior wall. This was thought to be a carcinoma because peristalsis did not appear to flow normally along the lesser curvature. Resection was done but there was no tumor—simply an enormous exaggeration of the folds.

This brief discussion has touched upon only a few of the many problems of gastric pathology. I have tried to demonstrate to you that pathology is not dead and static but can still take its place in the roster of subjects which contribute to our understanding of the pattern of disease.



Epochs in the Life of a Medical Student<sup>1</sup>  
*or*  
An Analogy Concerning Struggle for  
Survival, Drawn from the Development  
of Eggs in Mammalian Ovaries

EDGAR ALLEN<sup>2</sup>

As medical seniors you have passed your final examinations. Looking ahead at these exams, they may have seemed formidable hurdles;—looking back at them, they weren't so bad.

Medical school commencement is a big milestone in a medical career. Let's look back at what you've been through during the past few years. They have been years of strenuous study. A medical student works hard these days. The next biggest milestone was your college commencement, four years previously. Back four years more, graduation from high school and the beginning of college were big milestones in your education. Then we might even go four years more back to your beginning as high school freshmen. In periods of four years you've reached milestones,—“four year stones.”

The numbers of students passing these milestones is worth noting. How many of you who started as freshmen medical students have reached this commencement? There are more than 90 in this graduating class. As freshmen you were selected from about 800 applicants. If we look back at the graduating classes of high schools and consider only those that have continued to medical commencement, you represent the chosen few, as many have been eliminated or have chosen other professions, during the course of your medical education; but still the selective elimination has not been a rigorous process, when compared to other types of biological selective elimination.

Now if, instead of considering these units as years in the life of a medical student, we consider them as days in the life of a mouse, and instead of considering these numbers medical graduates, we consider them as eggs coming through development in the mammalian ovary and being ovulated,

---

<sup>1</sup> Presented at Informal Exercises in honor of the Class of 1942 at the Washington University School of Medicine on June 1, 1942.

<sup>2</sup> Professor of Anatomy, Yale University School of Medicine, New Haven, Conn.



we can build up an interesting analogy. How do the numbers and the time intervals compare? First as to the time intervals! Biologists have frequently compared the life span of man with the life span of the mouse or rat. Whereas a man lives 70 years, or even 90, the term of life of a mouse or rat is never more than 3 years. So one year in the life of a mouse is supposed to be equivalent to 30 years in the life of a man. For the purposes of our analogy, we will make one day in the life of a mouse comparable to one year in the life of a medical student.

Let us place ovulation as analogous to medical graduation. Every 4 days a mouse may ovulate 8, 9 or 10 eggs, when she is not pregnant. She has 2 ovaries, so each ovary produces 4 or 5 eggs. At the time one set of eggs is ovulating, a second set of follicles is at a medium stage of development, and will require 4 days of growth to the next ovulation. Eggs of the following generation which are to ripen 8 days in the future are enclosed in very small follicles. These would be comparable to your graduation from high school and entrance to college.

The set of eggs which is to ovulate 12 days hence is composed of cells still undifferentiated in the germinal epithelium. So as high school freshmen, we are not yet recognizable as eggs, either good or bad.

Now what about numbers in these graduating classes of eggs. From each ovary only 4 or 5 eggs are ovulated. Follicles which are to rupture 4 days hence, therefore known as "4 day follicles," by actual count of one ovary which had just produced one set of eggs, numbered 32; consequently in 4 days, of these 32 follicles only 4 or 5 ( $< 15$  per cent) will grow to ovulation size and ovulate. The others are doomed to die and be eliminated. What of the "8 day follicles," analogous to high school graduates who will be beginning college in the fall? There were 72 of these small follicles, but in the course of the next 8 days all but 4 or 5 of that 72 must die ( $< 8$  per cent survive).

To go back to the high school freshmen, nobody knows how many eggs are differentiated from the germinal epithelium to produce the eggs that will ovulate about 12 days in the future. Even without estimating percentages of survival, you can see that selective elimination is a rigorous process in the mammalian ovary and that many eggs die before attaining ovulation, i. e., before graduation.

How are these few favored ones chosen? Is the deciding factor genetic constitution? Is it favorable blood supply?

Now let's look ahead for 4 years! All of you are going into internships. How many into residencies? Very few of you will probably complete two years of residency, or prepare for a specialty in medicine or surgery. If I had a gift of vision, or some rare sort of a searchlight, perhaps an ultra



ray, that I could throw on different members of this audience, and find out right here and now which of you will complete 4 years of internship and residency with success, wouldn't it be keen? I would surely have to pick less than 10 or 15 of this whole graduating class.

I have had the great good fortune to find such a search light to use on the follicles in the ovary that are going to require 4 days to grow to the ovulation stage. This is the use of a remarkable drug, colchicine, which when injected into an animal, holds the cells which are dividing in mitosis for a period of 8 hours at least. It freezes them in the act of cell division, so that at a glance you can tell how rapidly a tissue is growing. This is a search light which can be turned on follicles. One may ask, "Is this follicle growing normally,—evenly,—is it growing more rapidly on the outside, or more rapidly on the inside?" I believe it will offer a method of telling which of the 32 "4 day follicles" are the favored few to ovulate. It is going to require 4 days of growth to ovulation. Are these follicles growing evenly or growing atypically; as though I turned the search light on you and said "Are you growing fast now or are you half asleep; are you in the early stages of mortification or elimination from this race to win a high place in medicine or surgery?"

To go back now to the situation for you in the next four years, a few of you are probably independently wealthy and you could afford to go on with an internship and residency without much trouble. Others of you, to complete a residency, will have to have some sort of financial help from outside,—like scholarship help during medical school or college. These follicles which are going to require 4 more days of growth in the mouse's ovary are in a similar situation. They must have financial help to complete their next 4 days of development. This outside help comes from the secretion of the gonadotropic hormone of the anterior pituitary gland. Without this pituitary stimulation they cannot possibly achieve ovulation. We know that with certainty, for, if the anterior pituitary is removed, these follicles cannot ovulate. If, on the other hand, you give them all the anterior pituitary stimulus that they can take, all 32 of these follicles may come through to ovulation. Smith and Engle induced ovulation of 63 eggs at one time in the rat by several implants of anterior pituitary glands. No one knows which follicles, or how the few favored 4 or 5 follicles are chosen from the 32. The same stimulus is available to all but in limited amounts. Perhaps it is just the big vigorous bully that gets more to eat than his weak neighbor.

Why do some medical schools turn out a large proportion of graduates who become distinguished men later? Is it just because there are many good eggs in the class. Or do a few keen professors or instructors provide a



superabundance of anterior pituitary gonadotropins in the form of opportunity or inspiration?

So far we've considered only the chances of survival to attain development. But in addition these follicles are secreting ovarian hormones. The ovarian hormones are essential for conditioning the uterus, vagina and mammary glands. Not only the few favored follicles which attain ovulation are secreting hormones,—even the ones that are to be eliminated are chipping in their share,—building up a bank balance on which only the favored few will “cash in.” So this group of follicles is like a football team advancing down the field so that the star back can make a touchdown.

What have you contributed in the way of hormones to the blood stream of Washington University School of Medicine to condition it for the future?

In turning this “colchicine search light” on the ovary 4 days before the next ovulation, or immediately after the last ovulation and noting the distribution of growth as indicated by cells in mitosis, it is possible to divide these 32 different follicles into three classes, one class is growing evenly, indicating that equal stimuli from the pituitary and from the ovum results in equal growth throughout the whole follicle. The second class is growing much more rapidly in the outer layers, little growth in inner layers,—indicating perhaps that there is plenty of pituitary stimulus acting on them, but for some reason or other, the inside stimulus, the autonomous stimulus within, is not sufficient to result in equal growth of the follicle. It is like the pure bred Saint Bernard dogs, or the bloodhounds, whose skin grows too rapidly,—become loose and wrinkled,—they grow faster in outer parts than inside. Then the third class of follicles is growing rapidly inside, but growth of the outer parts has stopped. This may mean too little pituitary gonadotropin! I think that both of these latter classes are in the process of elimination. They are not dead yet, but one is sound asleep “outside” and the other is asleep “inside.” Both classes are probably doomed for death and elimination. A considerably larger class in which growth is still evenly distributed throughout the whole follicle, probably represents the normal eggs which have a chance to ovulate. In this particular ovary which I have cited before there were still 12 follicles of this class,—therefore 7 of them are still to be eliminated.

Now what are you going to do with your next four years of life? Are you going to be one of the eggs that requires a lot of outside stimulus? Even with an abundance of outside stimulus, you won't get very far unless you have some stimulus from within to react with outside help. Add some internal stimulus, and if you get your share of gonadotropin, you'll come through to ovulation. You will be analogous to one of these few good eggs that is ovulated. You will “carry on,”—will advance research or practice



in medicine or in surgery. How many of you are going to be eliminated or are just going to carry on a routine,—“to be bound to the wheel of things,” as Kipling put it in “Kim.” Of course you’ll do some good, but how many of you are going to do something to drive a peg of progress in medicine? I wish I could turn the searchlight on you, and find out at this moment just how much inside stimulus you’ve got. There will probably be a great deal of luck or chance in how much outside stimulus you get, for there is only a limited amount of anterior pituitary gonadotropic stimulus. I wish you good luck, may you have your share, or even more if we can corner a little additional pituitary substance for your alma mater. I think the richest wish that I could give any of you today, truly it would be my wish if I could do it, would be distinguished service in the war effort, whether life were long or short in that capacity. Good luck!

---

Eclampsia. Some Thoughts on Therapy. Carl R. Wegner: J. Mo. State M. A., Vol. 39: pp. 98-99, April, 1942.

Conservative management of the patient with eclampsia is outlined to include magnesium sulfate intramuscularly before and immediately after a convulsive state, but not if the patient is in coma. Elimination and hydration are followed and controlled by enemas and intravenous and subcutaneous fluids respectively. Nutrition becomes a problem after the first twenty-four hours. Vaginal instillations of one percent neutral acriflavine in glycerin are given twice daily. Within 12 to 24 hours the condition of the patient is reconsidered and active obstetric interference may be deemed necessary if the case persists or grows worse. Examination and delivery of the patient are discussed as well as postpartum care.

---

Intraspinal Protrusion of Intervertebral Disks. Wendell Scott, R. M. Klemme and R. D. Woolsey: J. Mo. State M. A., Vol. 39: 131-132, May, 1942.

The use of intraspinal lipiodol provides a satisfactory procedure for the diagnosis of intraspinal protrusion of intervertebral disks. This diagnosis is controversial and abused without a practical and accurate objective method. The objection of the foreign body effect of the remaining lipiodol is overcome with a special type of needle and suction applied for the removal of the oil at the conclusion of fluoroscopy.



## The Quarantine<sup>1</sup>

SANDOR HORWITZ, M.D. '95<sup>2</sup>

The Quarantine is very old. Its beginnings go back into the dim past when man was just emerging from savagery. It is so old that the first authenticated case is unknown but probably dates back before written history begins. Among primitive tribes the taboo is exercised. The taboo is a prohibition or shunning of certain persons, places or things. The origin of this avoidance is believed by anthropologists to have been at first on some rational basis such as danger, harm or pestilence but later developed into a superstition. Among the Igorot or hill tribes of northern Luzon, in the Philippines, when small-pox broke out a taboo was declared upon their village and the inhabitants scattered into the surrounding hills. Among other primitive people we find evidence of similar health measures of a quarantine nature.

Probably the best known cases of early quarantine known to civilized man are those recorded in the Old Testament. The books of Moses are especially significant because of the imposition of health measures upon the chosen people. One of these restrictions was that of a quarantine on that dreaded disease of the Orient, leprosy, or as it was labelled, "uncleanness."

Chapters 13, 14, and 15 of Leviticus, third book of Moses give an interesting and detailed account of how the quarantine was enforced in Biblical times.

Chapter 12 of Numbers, fourth book of Moses, cites a specific case of a suspect leper, Miriam, sister of the great law-giver, Moses, who was held under quarantine for seven days outside the camp.

The term "quarantine" is one that has been used to cover a variety of procedures. Originally it signified merely isolation—the segregation of those afflicted with maladies thought to be communicable. With the passage of time and the development of accurate knowledge of various diseases, quarantine procedure has undergone remarkable evolution. To the lay mind quarantine still conveys the meaning of detention only—restraint under isolation or with limited communication. To the sanitarian the term includes not only detention, but segregation and the application of disinfection or fumigation, and similar preventive measures based on definite

---

<sup>1</sup> Read at the conference of the Central Division of the State District Health Units, Decatur, June 12, 1940. Received for publication April 8, 1942.

<sup>2</sup> District Health Officer, District #7, State of Illinois, Peoria, Ill.



epidemiologic information. Haphazard, arbitrary standards have given way to scientific, precise methods.

It is a matter of speculation as to what year or century restraint was first practiced in order to prevent the spread of disease. It is known that isolation of lepers was practiced in biblical time, but the measures taken were more or less imperfect. Whatever the efforts may have been in earlier centuries to prevent the spread of disease, it seems probable that detention of ships and travelers was first practiced by Venice in the early part of the fourteenth century, and the term quarantine had its origin from the Italian word "quarante," meaning forty, as forty days was the period of detention imposed upon infected vessels. As early as 1348 Venice had a system for the treatment of infected ships, travelers and merchandise. Venice established a quarantine station in 1403, and other ports on the Mediterranean followed this example, Genoa in 1467, and Marseilles in 1526.

At first, time was the main element depended upon for the elimination of contagion. The ship and its personnel and cargo were held isolated until the infection had run its course. Either because the time element alone did not prove effective (by reason of the unknown role of the convalescent carrier), or because of the slowness of the practice, methods were adopted to expedite the elimination of the contagion. Fumigation by boiling aromatic substances came into vogue and sulphur fumes were employed rather generally during the eighteenth century.

During the Middle Ages all sorts of theories were advanced as to the dissemination of disease. The doctrine of "polluted air," in one form or another, was the one that had the greatest support, and preventive measures were directed toward the purification of the atmosphere. In 1710 England passed a rigorous quarantine act, and even as late as 1721 two ships from Cyprus, where plague was then prevailing, were burned in English waters by the sanitary authorities. In the early part of the nineteenth century, the English quarantine restrictions were greatly modified, and vessels were not subject to detention unless a communicable disease had occurred during the voyage or upon arrival. This procedure has been followed in England and continental Europe to this day.

The American quarantine practice is somewhat stricter, preventive measures being applied not only to ships actually infected, but also to vessels, cargo and personnel from infected ports or territory.

The earlier practice of quarantine seems to have been directed against leprosy, plague and syphilis, and it was not until the eighteenth century that European countries gave attention to cholera and yellow fever, the latter first making its appearance in Europe in 1723, at Lisbon.



In colonial days and during the nineteenth century, in fact up to 1878, quarantine function in the United States was entirely in the hands of the state and local authorities, and was carried out in accordance with the prevailing conception as to the communicability of disease.

It was but natural that prior to the discovery of the specific causation of the disease the methods employed were largely empirical. Following the discoveries of Pasteur, Koch, and their contemporaries, quarantine procedure was placed upon a more rational basis. In addition to the detention and isolation of the sick, those who had been in contact with them were detained for a period equal to the incubation stage of the disease, and measures were adopted to sterilize articles and places infected or thought to be infected. It was the era of promiscuous disinfection and fumigation, and "fomites" were thought to be of prime importance in the dissemination not only of smallpox, but also of yellow fever, plague, cholera and typhus. Ships were washed down with bichloride solution, even to the individual stones in the ballast, and sulphur was burned in liberal quantities. It is rather interesting to read, in the Annual Report of the Marine Hospital Service for the year 1873, that the generous use of carbolic acid solution proved exceptionally effective in the treatment of yellow fever.

Although the purpose of fumigation had in view the destruction of bacteria and the disinfection of the environment in the measures applied against yellow fever, plague and typhus, we now know, in looking backward, that although the procedure was based upon a wholly erroneous conception of the etiology of these maladies, nevertheless the results were effective. The sulphur dioxide, futilely employed as a bactericide, was equally efficient in destroying *Stegomyia*, the carrier of yellow fever, the louse, vector of typhus infection, and rats and fleas, transmitters of plague, as though the fumigant had been used for these specific purposes.

Up until the early eighties of the last century quarantine measures were entirely administered by state and local authorities. The Annual Report of the Surgeon General of the Marine Hospital service for the year 1872, however, refers to an order of the Secretary of the Treasury in which the attention of Marine Hospital Service officers, customs officials, and revenue officers was directed to the provisions of the Act of February 25, 1799, which enjoined federal officers to cooperate in the enforcement of quarantine laws and regulations.

On account of their duties in caring for sick seamen, officers of the Marine Hospital Service began to evince more and more interest in epidemics introduced through vessels from infected ports, and this was especially so with respect to yellow fever. The Surgeon General's report of 1873 devoted considerable space to studies of the epidemics in the South.



As early as 1833 the Secretary of the Treasury was authorized by Act of Congress to employ additional revenue boats and officers to aid in the enforcement of quarantine laws and regulations, but the Act of April 29, 1878, may be considered as the first definite expression of Congress that the prevention of the introduction of infectious disease was a federal function. This act provided that the Surgeon General of the Marine Hospital Service (Public Health Service) should draft rules and regulations governing the quarantine treatment of vessels from foreign ports; that consular officers should keep the Surgeon General informed as to the sanitary status of vessels departing for American ports, and should also furnish information each week as to sanitary conditions of the foreign ports at which they were stationed. Provisions were also made for the weekly publication by the Marine Hospital Service of the sanitary data furnished by consular officials, and also empowered officers of the Marine Hospital Service to enforce the national quarantine rules and regulations. This Act embraced all of the salient features of the recommendations submitted by Surgeon General Woodworth at the International Medical Congress in Philadelphia, 1876.

Appropriations were likewise made by Congress in 1878 for "investigating the origin and causes of epidemic diseases, especially yellow fever and cholera, and the best method of preventing their introduction and spread." In 1879 authority was given for the assignment of medical officers to consulates for the purpose of supervising the enforcement of sanitary measures applicable to ships leaving for ports of the United States. In 1882 an epidemic fund was created by Congress, to aid local authorities in suppressing epidemics, and from that time on a similar appropriation became an established custom.

In 1882, the Marine Hospital Service rendered material assistance in the maintenance of a sanitary cordon around Brownsville, Texas, where yellow fever was prevailing. This resulted, according to report of the Governor, in "allaying excitement along the border counties." He also stated that the "efforts made by the Marine Hospital Service were a perfect success in protecting the state from a general epidemic."

The Marine Hospital Service gradually expanded its public health and quarantine scope. Detention and treatment of infected ships at quarantine stations at Ship Island (Gulf quarantine) and at Sapolo Sound (South Atlantic Quarantine) were set up in 1883.

In 1888 penalties for violation of quarantine laws were provided by Congress. In 1890 a federal law was enacted to prevent the interstate spread of certain infectious diseases under the rules laid down by the Surgeon General. In 1893 the organic quarantine act provided that no vessel from



a foreign port should enter a port of the United States except if it complied with the restrictions of this act. Violations were punished with a fine not exceeding \$5,000.

It will thus be seen that the Federal government at first cooperating with city and state quarantine officials eventually took over a unified and thorough-going control which was the logical thing to do. "States' rights" and "City rights" may have been nice political distinctions but the germs of disease intent upon traveling from one city to another, from one state to another, and from one country to another, had scant respect for them. Only the national government, and indeed, the cooperation of the civilized brotherhood of nations, could exercise a controlling influence on the spread of dreaded plagues that, if unchecked, would wipe out huge populations as in ancient days.

The Public Health Service now administers the quarantine at all ports of the United States, and this work is done through its division of foreign and insular quarantine. This division has two major functions—(1) the prevention of the entrance of infectious and contagious human diseases from foreign countries into the United States, and (2) the medical examination of aliens applying for admission to the United States as immigrants. In the exercise of the first-mentioned function the division has jurisdiction over all ships and all persons, both citizens and aliens, coming into American ports from abroad. The second function, of course, has to do with aliens only. In the medical examination of immigrants the Public Health Service acts in an advisory capacity to the Immigration Service of the Department of Labor in ports of arrival in the United States and to the Consular visa officers of the Department of State abroad.

---

Surgical Aspects of Acute Pancreatitis. Robert Elman: J. A. M. A., Vol. 118: April 11, 1942, pp. 1265-1267.

Acute pancreatitis is not a rare disease. In its common form it is rarely fatal but subsides spontaneously. It is often confused with other surgical and medical diseases causing severe pain in the upper part of the abdomen. The clinical diagnosis can seldom be made without the serum amylase test. The test gives positive results when performed soon after the onset of the attack. There is an unusual rise in the serum amylase. Necrosis of the pancreas must be considered if the symptoms and signs do not subside. The treatment of acute pancreatitis is medical; of necrosis of the pancreas is surgical.



## Dr. Joseph Nash McDowell

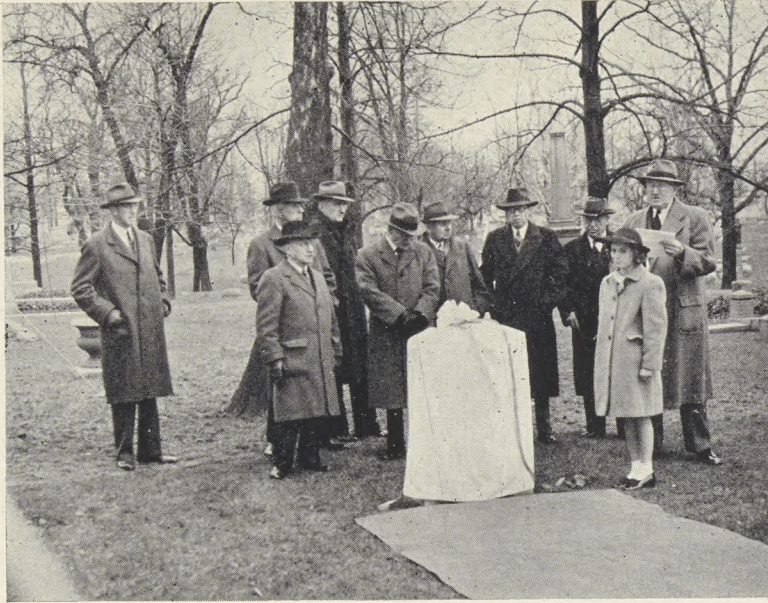
A simple but fitting ceremony was conducted at the unveiling of the gravestone marking the resting place of the Founder of the Missouri Medical College. Dr. Robert E. Schlueter, president of the Class of 1895, whose indefatigable spirit and energy assured success of the project of his class, served as chairman. Although the afternoon of March 28, 1942 was cloudy and rain threatened, about sixty were in attendance, chiefly physicians and their families, gathered by the McDowell lot in Bellefontaine Cemetery.

The chairman, after reviewing briefly the history of the project to erect a monument at the burial place of McDowell, proposed by the Class of 1895, Missouri Medical College, presented a short but comprehensive biographical sketch of the pioneer medical educator, anatomist and surgeon and of the high points in the history of McDowell's school, which came ultimately to be incorporated in the Medical Department of Washington University. Rebecca Duane Mastin, young daughter of Dr. and Mrs. E. V. Mastin and great-great-great-granddaughter of Ephraim McDowell, unveiled the granite monument, bearing the simple inscription that was known to be the wish of the Founder. Following, was the introduction by Dr. Robert J. Terry of Mrs. Earle A. Meyer, whose maiden name was Nancy Frazer, the great-granddaughter of Dr. Elijah Scott Frazer, a member of the first class to be graduated in McDowell's school, 1841. Members of the Class of 1895 present at the ceremony were introduced by Dr. Schlueter: Dr. C. G. Ahlbrandt of Kirkwood; Dr. W. E. Gibson of De Soto, Missouri; Dr. Sandor Horwitz of Peoria, Illinois; Dr. John H. McNutt of Hammond, Illinois; Dr. A. T. Quinn of St. Louis; Dr. Robert J. Terry of St. Louis; Dr. James W. Winn of Higbee, Missouri; Dr. John Zahorsky, St. Louis. In the company was Dr. Louis Behrens (Missouri 1894) and Dr. Frederick E. Woodruff (Missouri 1897); the latter as president of the St. Louis Medical Society, laid a beautiful wreath before the monument.

Dr. Philip A. Shaffer, Dean of Washington University School of Medicine, placing upon the grave a laurel wreath then read the fine and interesting tribute to Joseph Nash McDowell which is printed separately below.

Chancellor George R. Throop of Washington University concluded the ceremony with an eloquent address in which he rightly placed McDowell among the founders and builders of St. Louis, "to whom as a pioneer in the field of medical education in the Middle West a complete respect and tribute must be paid for that view and that energy and optimism which saw the future and erected here a *monumentum aere perennius*."





*Dr. Robert E. Schlueter, class president, introducing Rebecca Duane Mastin, who, as great-great-great-granddaughter of Dr. Ephraim McDowell, unveiled the monument.*

Before the company left the spot at the end of the ceremony, Dr. Schlueter expressed the appreciation of the Class of 1895 for cooperation of more than two hundred physicians in subscribing funds for the project, graduates of the Washington University School of Medicine and of the two parent schools, of alumni of St. Louis University School of Medicine, and alumni of other schools; cooperation that has resulted in the erection of a worthy monument and the guarantee by the Bellefontaine Cemetery Association of perpetual care of the McDowell burial lot.

#### ADDRESS BY DR. PHILIP SHAFFER

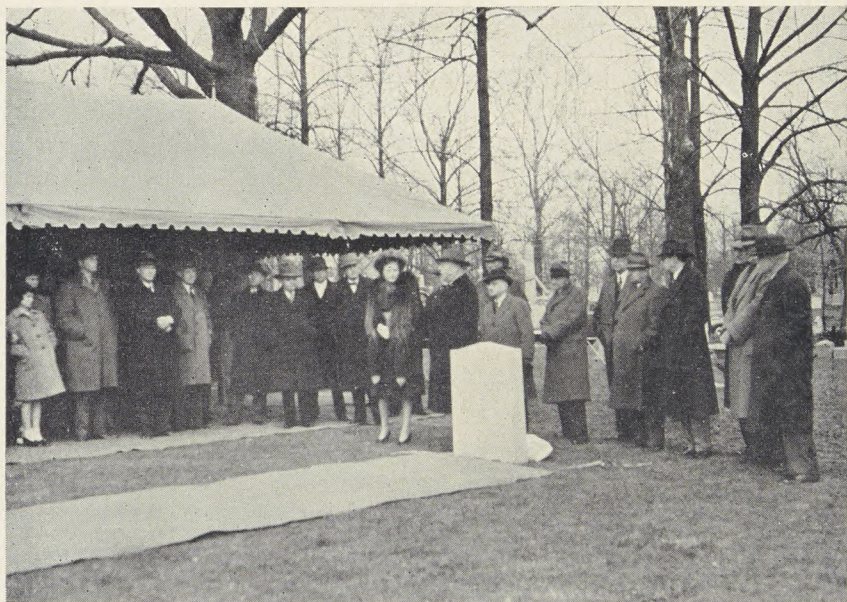
The honor of having a part in this historic ceremony I owe to the accident of being one of the successors of Joseph Nash McDowell in a line of deans of which he was the first and I the most recent incumbent. The academic genealogy of the Washington University Medical School has two branches through which it is related to the pioneers in education west of the Mississippi; on the one hand to St. Louis University through the St. Louis Medical College, and on the other to Kemper College and the University of Missouri through the Missouri Medical College. The roots of this branch were planted by McDowell in 1840 when he established the



Medical Department of Kemper College, the first to give medical instruction in St. Louis. The continued leadership of its founder is shown by the fact that for more than thirty years this school, although repeatedly changing its academic affiliations, was always popularly known as "McDowell's College."

On personal grounds also, I like to claim a quasi and remote academic descent from McDowell through my own ancestors. My grandfather for whom I was named graduated in 1852 from Jefferson Medical College in which McDowell had taught the first classes in Anatomy twenty-five years earlier. Like McDowell my grandfather was a surgeon in the Confederate Army.

Because of McDowell's very aggressive and outspoken Southern sympathies, his College building was confiscated by the Government in 1861 and used as a Federal prison during the war. Among the prisoners held there was my father, a defiant youth of southern sentiments then living in St. Louis. When fifty years later, in 1910, I came as a young professor to the reorganized Washington University Medical School, my father told me how he had attended McDowell's College and of his claim to be one of its alumni. He was at any rate of the same political persuasion—a rela-



*Dr. Robert J. Terry introduces Mrs. Nancy Frazer Meyer, great-granddaughter of Dr. Elijah Scott Frazer, member of the first class to be graduated from McDowell's School, 1841.*



tion not unimportant in those days. However valid my personal claims of relationship, I have no less the honor to lay a wreath of laurel on the grave of Joseph Nash McDowell, a tribute from the Faculty of a school proud to recognize him as one of its founders.

It is, I believe, appropriate to quote a few sentences from the address McDowell delivered in June, 1840, on laying the cornerstone of the Kemper Medical College. Parts of this prophetic and eloquent speech are printed in a valuable historical paper written by Dr. Terry on the origins of the Missouri College.

"In founding a school of medicine in our city, we feel assured we shall be sustained by the good wishes of our people and as far as our country's circumstances will allow, receive their earnest encouragement. Why should we not have a school of medicine in St. Louis? It will not only bring to our city large sums of money and enhance greatly our interest . . . , but it will add to our common stock of knowledge, warm up and excite our citizens and give an impulse to learning in all its departments. . . . Let us then encourage our sons, and as their tastes or inclinations lead them, lend them our fostering care. . . . The roses which we have planted in the bosom of the wilderness will bud afresh in every future generation. The balm



*Chancellor Throop, Dean Shaffer, Dr. Woodruff, president of the St. Louis Medical Society, and members of the class of 1895 Missouri Medical College.*



which takes root here will be gathered by every age to heal the nations that follow us, and St. Louis will be the Gilead of our beautiful valley."

To McDowell and to other pioneers we of this generation owe a debt of gratitude for laying the foundations upon which have been later erected the present medical schools and hospitals in St. Louis. On behalf of my colleagues of the present faculty of the Washington University Medical School I lay this laurel wreath on the grave of Joseph Nash McDowell, a tribute to his memory.

I would also express our appreciation to those now living, to the Class of '95 of the Missouri Medical College, whose interest in the traditions of an earlier age has provided us with this opportunity to honor McDowell's memory by this brief ceremony, at a time which celebrates a century of progress in the teaching of medicine in St. Louis.



*Monument marking the grave of the Founder of the Missouri Medical College, in Bellefontaine Cemetery, St. Louis, unveiled March 28, 1942.*



## Report of Conferences

### MEDICINE

REPORTED BY DR. LOUIS H. HEMPELMANN, JR., '38

#### **Radioactive Phosphorus in the Treatment of Leukemia and Allied Diseases**

The present treatment of leukemia and allied diseases is not satisfactory. Excellent remissions of these diseases can be obtained by means of x-ray and arsenic therapy, but there is little evidence that these methods prolong life. For this reason, new approaches to this difficult problem are being sought continually. The most recent addition to the list of therapeutic agents is radioactive phosphorus. This material, produced by the Cyclotron, has captured the imagination, and great hopes have been held for its use in leukemia. It must be remembered, however, that radioactive phosphorus provides nothing more than another means of irradiating diseased tissue. The biological effect of radioactive phosphorus is identical with that of x-rays and radium, but the phosphorus does not have the physical limitations of a beam of x-ray or a capsule of radium. Therefore one has reason to expect that the clinical results in the case of radioactive phosphorus will differ from those of the older forms of radiation therapy.

Before dealing with the clinical aspects of radioactive therapy, it will be necessary to discuss briefly the subject of radioactivity and radioactive isotopes. Radioactivity is the term applied to that property of an element whereby it emits radiation. The emission of radiation is associated with a spontaneous atomic explosion which may result in the transmutation of an atom into an entirely new chemical element. The resultant element also may be radioactive as in the case of radium which decays into radon, a radioactive gas. This may be repeated several times so that a chain or a series of atomic disintegrations occur. The resultant element, on the other hand, may be stable as in the case of polonium, a member of the uranium series, which decays into lead. The exact moment of disintegration is unpredictable for an individual atom; a large group of atoms, however, will decay at a rate which is characteristic of the element. This rate varies considerably with different radioactive elements and the time for complete disintegration may be a matter of minutes in some cases and of millions of years in others. It is easily understandable, therefore, that the only radioactive elements still found on the earth have extremely slow rates of decay or else they are being formed continually from long-lived "parent"



elements. Though it is possible that there were other shorter-lived radioactive elements when the world was young, the only ones found at the present time are those of the uranium, thorium and actinium series of disintegrations.\* Even these elements are slowly disappearing and shall eventually become extinct.

During the past eight years as a result of the development of the Cyclotron and other atom-smashing devices, it has become possible to produce the short-lived radioactive elements which do not exist in nature. In truth, the number of radioactive forms of elements which can be produced artificially is much larger than the number of stable forms which occur naturally. Artificial radioactivity is produced by means of high speed subatomic particles which have sufficient energy to penetrate the innermost part of atoms. As a result of this penetration of the atomic nucleus, there may be internal rearrangement of its constituent particles. Following the rearrangement, unstable forms or so-called radioactive isotopes of the element may be produced. These radioactive isotopes have the same biochemical properties as the stable forms of the element and, until they decay, undergo the same biochemical reactions. It is this fact that makes radioactive isotopes such valuable tools in metabolic studies since it is possible to detect the presence of an element by means of the radiations which it emits. It even permits one to estimate the amount of the element present in any given sample.

The radioactive isotope of phosphorus is prepared by bombarding ordinary red phosphorus with the high speed particles produced by the Cyclotron. As a result of the entrance of such a particle into the nucleus of the phosphorus atom, the atomic weight is increased from 31 to 32 and the atom becomes unstable. The resultant radioactive isotope is often called  $P_{32}$ . During the bombardment of several grams of phosphorus, approximately one atom in a million is rendered radioactive.  $P_{32}$  decays at a constant rate which halves its original value every 14.3 days. In the process of disintegration, it emits a high speed electron or beta particle with an average energy of 600,000 volts. With the emission of the electron, the phosphorus atom is converted into sulfur. Before it can be used therapeutically, the phosphorus must be synthesized into disodium phosphate which is dissolved in enough water to make an isotonic solution.

Radioactive phosphorus was one of the first isotopes to be used extensively in metabolic studies since it could be made readily and its radiations were easily measured. George Hevesy, a Danish physicist, was the pioneer in this

---

\*It is also true that there are minute amounts of radioactive potassium, rubidium and samarium.



field and his brilliant experiments added much to our knowledge of the mechanism and rate of formation of organic phosphorus compounds and the manner of exchange of inorganic phosphate radicals. Simultaneous investigation at the University of California brought forth the first indication of the place of radioactive phosphorus in therapy. While studying the effects of  $P_{32}$  on the formed elements of the blood of chicks, Scott and Cook noted a definite decrease in the white blood count. They attributed this to the accumulation of the isotope in bone and suggested that radioactive phosphorus might prove useful in the treatment of leukemia where selective irradiation of the bone marrow is desirable. This idea was expanded in a series of experiments on leukemic mice by Dr. John Lawrence and his colleagues at the Radiation Laboratory of the University of California. They found that the phosphorus was not only taken up by bone but was retained by leukemic tissue to a much greater degree than by normal tissues—in some cases the leukemic tissues retained three times as much phosphorus. Furthermore it was found that the nucleoprotein fraction of the malignant tissue was responsible for the abnormal phosphorus retention. This is the result of the abnormal growth and division of cell nuclei rather than a property of malignancy per se since regenerating rat liver shows the same response. Thus the reason for the great uptake of radioactive phosphorus by leukemic tissue appears to be due to its role as nutrient material for the rapidly metabolizing cells.

Even before these animal experiments were completed, the beneficial effect of radioactive phosphorus had been observed in patients with chronic leukemia. The first method of using radioactive phosphorus employed by Dr. Lawrence involved the administration of large amounts of the isotope orally or intravenously. Doses of five to ten millicuries of  $P_{32}$  were used (this is equivalent in radiant energy to the same number of milligrams of radium.) If this did not cause sufficient fall in white blood count, the dose was repeated after several weeks when most of the radioactivity had disappeared from the body. Recently, however, it has been found advantageous to administer the phosphorus intravenously every two or three days in smaller doses (0.5-2.0 millicuries). By this means, it is possible to supply the growing cells with radioactive phosphorus for periods of weeks or months. Since  $P_{32}$  is also taken up by normal tissues, it is felt that the latter technique permits maximum destruction of malignant tissue with the least radiation elsewhere.

The clinical use of radioactive phosphorus has been extended to include polycythemia vera, lymphosarcoma, Hodgkin's disease and primary and secondary bone tumors. Even though this isotope has been used for four years it is difficult to evaluate its place in therapeutics. Since only a few



investigators have had access to this material, the number of patients treated with  $P_{32}$  has been relatively small. Because of the changing methods of treatment and the short space of time during which each method has been employed, it will probably be several years before statistical studies comparing  $P_{32}$  with other forms of radiation will be of value. However, even at this time, certain clinical impressions are evident. In diseases of the bone marrow where selective irradiation of the blood forming elements is desired,  $P_{32}$  produces excellent immediate remission of the disease. Thus radioactive phosphorus is of definite value in treating polycythemia vera, chronic myelogenous and lymphatic leukemias and multiple myelomas. This is particularly important in polycythemia where other methods of treatment are not satisfactory. Acute leukemias, on the other hand, respond as unsatisfactorily to this form of radiation as to x-rays. In tumors of the soft tissues, the results are variable because of the small margin of safety between the amount of the isotope needed to cause regression of the tumor and that which causes untoward depression of the white blood count. Only the most radiosensitive tumors can be expected to respond. Many cases of lymphosarcoma, therefore, regress extremely well with  $P_{32}$ . Primary carcinomas are not sufficiently sensitive for radioactive phosphorus to be effective. Thus it seems clear that as far as immediate regression of leukemia and certain other diseases is concerned, radioactive phosphorus offers at least as much as x-ray therapy with the added advantage that it does not cause roentgen sickness. As far as a comparison between the effect of radioactive phosphorus and x-rays on the ultimate course of these diseases, time alone will show which is superior.

It is evident from the above discussion that the miracles which were predicted for radioactive phosphorus have not yet been achieved. The most promising feature of radioactive therapy would seem to be shown by what has been accomplished in so vast a field in so short a time. Radioactive therapy is still in its infancy. Much more work must be done with phosphorus before the best method of using it will be found. Phosphorus may be more effective if administered in chemical combination other than disodium phosphate. Many other radioactive elements must be used in an unlimited number of compounds before the possibilities of selective localization will be exhausted. These are all problems which will be solved in the future.



**PEDIATRICS**

REPORTED BY DR. JOHN H. DOVAL

**Tetanus in a Child**

Reynold N., a boy of seven years, entered the hospital on May 26, 1942, because of choking spells, tonic convulsions and trismus, of approximately 9 hours duration. During the four weeks prior to the onset of these symptoms he had been ill with pertussis. Two weeks before entry he was bitten by a dog which was later accidentally killed. The dog was not examined for the presence of rabies. Five days before entry a splinter entered his left forefinger and was removed the same day. The wound later became infected. Examination revealed the following: (1) Severe opisthotonus; (2) trismus; (3) generalized tonic muscle spasm; (4) paronychia on the left middle finger; (5) a pustular lesion on the inner surface of the upper lip. Very slight stimulation caused severe tonic convulsions with laryngospasm and with cyanosis. A diagnosis of tetanus was made. He was given 100,000 units of tetanus antitoxin, half intravenously, and kept under avertin anaesthesia. On two occasions during the first 24 hours after admission, he had laryngeal spasm and ceased breathing but both times was revived with artificial respiration.

In reviewing the subject, the following points were brought out: The prevention of convulsions in tetanus is important because death is apparently due to convulsive laryngeal spasm. The tetanus toxin absorbed before the administration of antitoxin becomes fixed in the nervous tissue and convulsive death must be prevented until this toxin can be oxidized. The patient must be anesthetized during this period. Avertin anesthesia produces good relaxation. The danger of respiratory depression is minimized by maintaining the level of anesthesia above the point of relaxation of the abdominal muscles.

It is generally believed that a blood level of .01-.1 units per c.c. of passively administered antitoxin is protective while actively produced antitoxin is protective at a blood level of .001-.01 units per c.c. An adequate antitoxin titre is present for 1 to 2 weeks after a prophylactic dose of 1500 units of antitoxin. Following a therapeutic dose of 100,000 units of antitoxin a protective level can be demonstrated for 57 to 68 days.

Immunity produced by tetanus toxoid is too delayed to be of prophylactic value unless there has been previous inoculations with the toxoid. Daily subcutaneous inoculations for seven days did not produce antitoxin in 7 to 8 weeks but a primary inoculation has a "priming" effect in that it sensitizes the body tissue so that a later stimulating dose of toxoid will cause a rapid and high rise in the antibody level within a few days.



It would be desirable to have an active immunity develop while the passive immunity is disappearing. It has been shown, however, that the primary stimulating action of toxoid is inhibited by the presence of transferred antitoxin. It is necessary, therefore, to give toxoid at intervals while a passive immunity is disappearing to produce the transition from passive to active immunity.

All persons immunized by toxoid will be protected even after a long interval by another stimulating dose of toxoid if exposed to tetanus by virtue of a traumatic wound. In such individuals, the attending physician may wish to have added assurance of protection by giving prophylactic antitoxin, possibly for medico-legal reasons. If so the antitoxin should be administered one or two days after the dose of toxoid, since the stimulating effect of the toxoid will be inhibited by the simultaneous injection of antitoxin.

## UROLOGY

REPORTED BY DR. CARL A. WATTENBERG

### **Persistent Lumbar Pain Associated with a Healed Infarct of the Kidney**

History No. 95890: A 34-year old white woman was admitted to Barnes Hospital on March 3, 1942. Since September, 1940, she had been complaining of severe boring pain in her right flank. There were no associated urinary findings.

She had a number of operations before entering Barnes Hospital. These operations were thyroidectomy, 1931; tonsillectomy, 1933; appendectomy, 1934. Also she had her right kidney explored with removal of an aberrant blood vessel in September, 1940. In November, 1940, the same kidney was explored, and from that time until entry at Barnes Hospital she was cystoscoped often in an effort to relieve the pain in the right flank.

On admission she was slender and appeared to be in pain with her right leg drawn up. On physical examination no positive findings were present except evidence of weight loss, tenderness in the right flank, and the operative scars. Before entry she had been taking large doses of morphine. Previous to operation  $\frac{1}{2}$  gr. of morphia would not relieve her or satisfy her.

She was cystoscoped March 4, 1942. The bladder was negative; catheters were passed up to each kidney without difficulty; intravenous P. S. P. gave a slightly decreased function on right with some increased function on left. Pyelograms supine and erect revealed a normal left kidney, and a small kidney and pelvis on the right with no obstruction. Pain was produced on



the right side with little increased intrapelvic pressure. There was no nephroptosis on either side.

It was the opinion from the x-ray pyelograms and history that this was a scarred contracted kidney giving pain. The Kahn test was negative and the N. P. N. 11 mgs. %. Blood counts were normal. Cultures of the urine from the right kidney, left kidney and bladder were reported as giving no growth.

The right kidney was explored and was found densely fixed in scar tissue. The lower pole of the kidney was nearly all fibrous tissue. It appeared to be the site of an old infarction. Due to this dense fibrosis and atrophy, no plastic repair could be done, and a nephrectomy was carried out.

Several days post-operative this patient changed remarkably. She no longer wanted morphine as before, her appetite improved, and she stated she was more comfortable than she had been for months. When dismissed from the hospital March 22, 1942, she was happy, had gained some weight and was taking no medicine. On entry she was thought to be a drug addict.

### **Fibrinous Concrement in the Renal Pelvis with Hematuria**

History 95501. A 58-year old white man entered Barnes Hospital February 12, 1942. For two months he had gross blood in his urine. This cleared only on several brief occasions. Also for one month he had vague aches in left lumbar region and flank. There was no burning, frequency or difficulty associated with urination. He had lost 13 pounds during the past 6 months in spite of a good appetite. The essential physical findings were some tenderness in left flank and no abnormal masses. A cystoscopy was carried out on February 16, 1942, during which time blood could be seen coming from left ureteral orifice. Catheters were passed to each kidney without difficulty. The urine from the left kidney was grossly bloody. Intravenous P. S. P. showed a decreased function on the left. Pyelograms taken supine and erect showed slight dilatation of the left renal pelvis and a suggestive filling defect. Acid-fast stains of the urinary sediment were negative. The N. P. N. was 21 mgs. %. The W. B. C. count was 7,900. The Kahn test was negative.

On February 19, 1942, the left kidney was explored. It was freed easily. The kidney was of normal size and normal to palpation. Nephrostomy was then done, opening the kidney and exposing the entire pelvis. The only pathological change that could be found was a gray fibrin mass in the pelvis, 1½ cm. in diameter. This was removed. The kidney was closed with fat pads in the nephrostomy incision. A nephrostomy tube also was inserted.

His post-operative course was uneventful. This was a case of fibrin concretum in the renal pelvis and persistent bleeding from that kidney.



## Publications by the Staff of the School of Medicine

### WASHINGTON UNIVERSITY

April-June, 1942

- Agress, Harry. Plasma or whole blood. *Mod. Hosp.*, v. 58: 100-104, May 1942.
- Beamer, Parker R. Sulfanilylguanidine in control of *Salmonella* infection and carrier state in mice. *Proc. Soc. Exper. Biol. & Med.* v. 49: 418-421, March 1942.
- Blades, Brian, and Burford, Thomas H. The influence of sulfonamide therapy on postpneumonic empyema thoracis. *J. A. M. A.* v. 118: 950-952, March 21, 1942.
- Blades, Brian, and Kent, E. M. Experimental observations upon certain intracranial complications of particular interest to the thoracic surgeon. *J. Thoracic Surg.* v. 11: 434-445, April 1942.
- Bredeck, Joseph F., Sulkin, E. S., and Douglass, D. D. Epidemic influenza: epidemiological, clinical and laboratory aspects of the 1940-41 outbreak in St. Louis. *Am. J. Pub. Health*, v. 32: 374-380, April 1942.
- Bronfenbrenner, J., and Hershey, A. D. Factors influencing the infectivity of bacteriophage. *Proc. Soc. Exper. Biol. & Med.* v. 49: 587-588, April 1942.
- Brown, James Barrett, and McDowell, Frank. Massive repairs of burns with thick split-skin grafts. *Ann. Surg.* v. 115: 658-674, April 1942.
- Brown, James Barrett, and McDowell, Frank. "Field-fire" and invasive basal cell carcinoma—basalsquamous type. *Surg., Gynec. & Obst.* v. 74: 1128-1132, June 1942.
- Cooke, Jean V. Diagnosis and treatment of tuberculosis in children. *M. Clin. North America*, v. 26: 575-594, March 1942.
- Cowdry, E. V., Baumberger, J. P., and Suntzeff, V. Methods for the separation of epidermis from dermis and some physiologic and chemical properties of isolated epidermis. *J. Nat. Cancer Inst.* v. 2: 413-423, Apr. 1942.
- Cowdry, E. V., and Paletta, F. X. Influence of colchicine during methylcholanthrene epidermal carcinogenesis in mice. *Am. J. Path.* v. 18: 291-306, March 1942.
- Cramer, William. A retrospect to early cancer research. *Weekly Bull. St. Louis M. Soc.* v. 36: 298-300, March 20, 1942.
- Cramer, William, and Stowell, R. E. The effect of solvents in methylcholanthrene epidermal carcinogenesis. A comparison of benzene and acetone. *Cancer Research*, v. 2: 193-197, March 1942.
- Elman, Robert. Protein deficiency in surgical patients and its correction. *J. Am. Dietet. A.* v. 18: 141-144, March 1942.
- Elman, Robert. Surgical aspects of acute pancreatitis. *J. A. M. A.*, v. 118: 1265-1267, April 11, 1942.
- Elman, Robert, Brown, Frank, and Wolf, Harriet. Studies on hypoalbuminemia produced by protein-deficient diets. II. Rapid correction of hypoalbuminemia with an ad libitum meat diet. *J. Exper. Med.* v. 75: 461-464, April 1942.
- Elman, Robert, Horvitz, A., and Sachar, L. A. Effect of parenteral amino acids (hydrolyzed casein) on growth of rats. *Proc. Soc. Exper. Biol. & Med.* v. 49: 118-121, Feb. 1942.
- Elman, Robert, Sachar, L. A., and Horvitz, A. Studies in hypoalbuminemia produced by protein-deficient diets. I. Hypoalbuminemia as a quantitative measure of tissue protein depletion. *J. Exper. Med.* v. 75: 453-459, April 1942.



- Elmer, Warren P., and Harrison, L. B. Treatment of vascular emergencies. *M. Clin. North America*, v. 26: 325-342, March 1942.
- Furlow, Leonard T. Tic douloureux of the nervus intermedius (so-called idiopathic geniculate neuralgia). *J. A. M. A.* v. 119: 255-259, May 16, 1942.
- Goldman, Alfred. Psittacosis pneumonia. *Weekly Bull. St. Louis M. Soc.* v. 36: 322-324, April 3, 1942.
- Hansel, French K. Allergy in otolaryngology and ophthalmology. A review of the recent current literature. *Laryngoscope*, v. 52: 242-252, March 1942.
- Hartmann, A. F., Meeker, C. B., Perley, Anna M., and McGinnis, H. G. Studies of amino acid administration. I. Utilization of an enzymatic digest of casein. *J. Pediat.* v. 20: 308-324, March 1942.
- Heinbecker, Peter, and White, H. L. Experimental obesity in the dog. *Proc. Soc. Exper. Biol. & Med.* v. 49: 324-327, March 1942.
- Hershey, J. H. Diverticula of the duodenum. *J. Missouri M. A.* v. 39: 134-139, May 1942.
- Julianelle, L. A., Boots, R. H., and Harrison, G. H. Staphylococcal infections of the eye. *Am. J. Ophth.* v. 25: 431-436, April 1942.
- Julianelle, L. A., and Smith, J. E. Studies on the infectivity of trachoma. XI. The effect of sulfanilamide on the virus. *Am. J. Ophth.* v. 25: 317-321, March 1942.
- Kalckar, Herman W. The enzymatic action of myokinase. (Letter to the editors) *J. Biol. Chem.* v. 143: 299-300, March 1942.
- Key, J. Albert. Emergency treatment of simple and compound fractures. *M. Clin. North America*, v. 26: 469-492, March 1942.
- Key, J. Albert, and Large, A. M. Histoplasmosis of the knee. *J. Bone & Joint Surg.* v. 24: 281-290, April 1942.
- Keyes, E. L. Chronic ulcerative lesions of the mouth. Incidence of cancer in 2,077 cases at Barnard Hospital. *Am. J. Surg.* v. 56: 70-78, April 1942.
- Kountz, William B., Smith, J. R., and Wright, S. T. Observations on the effect of tourniquets on normal subjects, and chronic heart failure. *Am. Heart J.* v. 23: 624-636, May 1942.
- Larimore, Joseph W. Treatment of gastrointestinal emergencies. *M. Clin. North America*, v. 26: 361-374, March 1942.
- Loeb, Leo. Medicine and the community. *Weekly Bull. St. Louis M. Soc.* v. 36: 304-307, March 20, 1942.
- Loeb, Leo, and Blumenthal, H. T. Parallelism in response of thyroid and parathyroid to various hormones and hormone-like substances. *Endocrinology*, v. 30: 502-510, March 1942.
- Luten, Drew. Cardiac emergencies. *M. Clin. North America*, v. 26: 315-323, March 1942.
- MacBryde, Cyril M. Addison's disease: diagnosis and treatment. *M. Clin. North America*, v. 26: 391-400, March 1942.
- MacBryde, Cyril, Castrodale, D., Helwig, E., and Bierbaum, O. Hepatic changes produced by estrone, estradiol and diethylstilbestrol. *J. A. M. A.*, v. 118: 1278-1281, April 11, 1942.
- Maughs, Sydney B. A concept of psychopathy and psychopathic personality, part 1. *J. Crim. Psychopath.* v. 3: 494-516, Jan. 1942.
- Maughs, Sydney B. A concept of psychopathy and psychopathic personality, part 2. *J. Crim. Psychopath.* v. 3: 664-714, April 1942.
- Moore, Robert A. The relation of pathology to clinical medicine. *Weekly Bull. St. Louis M. Soc.*, v. 36: 301-303, March 20, 1942.
- Mountjoy, Philip S., and Scholz, P. R. Fiberglas suture material. Preliminary report. *Am. J. Surg.* v. 56: 619-621, June 1942.
- Myers, Dan W. Diagnosis and treatment of extrapulmonary tuberculosis. *M. Clin. North America*, v. 26: 595-613, March 1942.



- Neavles, J. Response of Bone Marrow in AKH and RFI mice to nucleic acid. *Proc. Soc. Exper. Biol. and Med.* v. 49: 458-460, March 1942.
- Olmsted, William H. Diabetic acidosis. *M. Clin. North America*, v. 26: 375-390, March 1942.
- Probststein, J. G., and Senturia, H. R. Volvulus of the mega-sigmoid with hepato-diaphragmatic interposition. *Weekly Bull. St. Louis M. Soc.*, v. 36: 333, April 10, 1942.
- Proetz, Arthur W. 2-amino-heptane sulfate as a nasal vasoconstrictor. *Ann. Otol., Rhin. & Laryng.* v. 51: 112-116, March 1942.
- Scott, Wendell, Klemme, R. M., and Woolsey, R. D. Intraspinous protrusion of intervertebral disks. *J. Missouri State M. A.* v. 39: 131-132, May 1942.
- Senturia, Hyman. The Roentgen findings in increased lead absorption due to retained projectiles. *Am. J. Roentgenol.*, v. 47: 381-391, March 1942.
- Soule, S. D. Obstetric emergencies associated with hemorrhage. *M. Clin. North America*, v. 26: 493-508, March 1942.
- Soule, S. D. Symposium on maternal welfare. Cesarean section. *J. Missouri State M. A.* v. 39: 95-96, April 1942.
- Speert, Harold. "Pale epithelium" in the mammary gland and its experimental production in the Rhesus monkey. *Surg., Gynec., & Obst.* v. 74: 1098-1105, June 1942.
- Speert, Harold. Supernumerary mammae, with special reference to the Rhesus monkey. *Quart. Rev. of Biol.* v. 17: 59-68, March 1942.
- Strauss, Arthur E. Angina pectoris, coronary occlusion, dissecting aneurysm; a diagnostic triad. *Weekly Bull. St. Louis M. Soc.* v. 36: 324-325, April 3, 1942.
- Terry, R. J. Absence of superior gemellus muscle in American white and negroes. *Am. J. Physical Anthropol.* v. 29: 47-56, March 1942.
- Tsuchiya, H. Evaluation of culture method as an aid in the diagnosis of amebiasis. *Am. J. Trop. Med.* v. 22: 147-151, March 1942.
- Wegner, Carl R. Eclampsia. Some thoughts on therapy. *J. Missouri State M. A.* v. 39: 98-99, April 1942.
- Willett, Joseph C., and Gillick, F. G. Venereal disease control in St. Louis. *Southern M. J.* v. 35: 332-339, April 1942.
- Wilson, Keith S. Management of emergencies due to allergy. *M. Clin. North America*, v. 26: 429-444, March 1942.
- Wolff, Dorothy. Microscopic study of temporal bones in dysostosis multiplex (gargoylism). *Laryngoscope*, v. 52: 218-223, March 1942.
- Womack, Nathan A., and Bricker, Eugene M. Pathogenesis of cholecystitis. *Arch. Surg.* v. 44: 658-676, April 1942.

---

The Influence of Sulfonamide Therapy on Postpneumonic Empyema Thoracis. Brian Blades and Thomas H. Burford: *J. A. M. A.*, Vol. 118: Mar. 21, 1942, pp. 950-952.

From a study of 30 cases of postpneumonic empyema occurring during or after sulfonamide therapy for pneumonia and 29 cases which occurred in pneumonias not treated by sulfonamides the incidence of empyema is found to be less in the former group. When empyema does occur in the sulfonamide treated case, it is apt to be atypical and more difficult to treat. According to this study, once the pulmonary process is under control and pus has formed in the pleural space, sulfonamides should be discontinued.



## News from the Medical School and Affiliated Hospitals

The Chancellor has announced the appointment of Dr. Edwin Francis Gildea as Professor of Psychiatry and Head of the Department of Neuropsychiatry. Dr. Gildea graduated from Colorado College in 1920 and from Harvard Medical School in 1924. After service as a house officer and staff member at the Boston City Hospital and Boston Psychopathic Hospital, he joined the faculty of Yale University where he has successively been Research Assistant, Instructor, Assistant Professor and Associate Professor in Psychiatry and Mental Hygiene. Dr. Gildea's investigations have been focused on the chemical, endocrinological and nutritional aspects of psychiatric conditions, particularly of depressive states and schizophrenia. He is a member of the American Neurological Association and the American Psychiatric Association. This appointment fills the vacancy created when Dr. John Whitehorn accepted the Professorship of Psychiatry at Johns Hopkins in the summer of 1941.

At Commencement on June 2, an honorary degree was conferred on Dr. Edgar Allen. The citation read by Dean Shaffer was as follows: "Mr. Chancellor: I present Edgar Allen, an anatomist known and admired throughout the world for his contributions to the physiology of reproduction. After serving in the Army during the First World War, he came to our Medical School as a graduate student and instructor in anatomy. For his doctorate dissertation he chose to study the sexual cycle in mice, a study that inaugurated notable advances by himself and others, now of great benefit to humanity. Experience acquired with mice led to his developing a simple, rapid test for measuring the hormonal activity of glandular extracts; a test that became an essential tool in elucidating mechanisms of the reproductive cycle. And in the hands of his colleague, Doisy, and other chemists it made possible the isolation of the estrogenic hormones, now used as therapeutic agents. Dr. Allen was the first to study the physiological effects of these hormones in primates. He is one of the pioneers in studying the relation of the sex hormones to cancer; and is the editor and author of important books on endocrinology. He left this University in 1923 to become Professor of Anatomy in the University of Missouri where for four years he was also Dean of the Medical School. He is now Professor of Anatomy at Yale University. A good example of a scientist, he is a biologist who combines highly specialized knowledge and productivity with a breadth of view, literary talent and administrative ability."



The Chancellor announced the following gifts to the Medical School between April 1 and June 30, 1942: from the Josiah Macy, Jr. Foundation, \$2,500 in continued support of the study of ageing in mammalian cells by Dr. Alfred Lansing in the Department of Anatomy; from the John and Mary Markle Foundation, \$2,500 in support of a proposed study by Drs. Gordon Scott and James O'Leary on the mechanism of vision; from Mead Johnson and Company, a fellowship of \$1,500 to the Department of Pediatrics for 1942-43; from an anonymous donor, \$1,500 representing the balance of a gift for two years to cover the salary of Dr. Fritz Lieben in the Department of Surgery; from Mr. Morton J. May, \$250 for the Neurosurgical Service under Dr. Sach's direction; from Mr. David P. Wohl, \$250 for the Neurosurgical Service under Dr. Sach's direction; from The John and Mary R. Markle Foundation, \$1,800 to the Department of Ophthalmology in support of a proposed study on vitamin A and carotenes in Ophthalmology by Dr. Benjamin Milder; from The International Cancer Research Foundation, \$4,720 to Dr. Robert Moore in the Department of Pathology; from the W. K. Kellogg Foundation, \$10,000 to be used for student aid; from Dr. Kiyoshi Inouye, an alumnus, a contribution of \$500 to the Alumni Fund; from Dr. and Mrs. F. E. Woodruff, \$200 as an additional contribution to the Woodruff Fund for hospitalization of eye patients; from the Josiah Macy, Jr. Foundation, \$3,000 in continued support of the study of experimental production of benign hypertrophy of the prostate in animals being conducted by Dr. Robert Moore in the Department of Pathology; and from Mr. Julius Simon, a gift of \$325 to the Department of Neuropsychiatry for the purchase of an electric shock therapy machine.

---

Appointments to the Staff of the Medical School during the past three months include Dr. Arthur C. Darrow, Assistant in Clinical Medicine; Dr. Karl J. Poppe, Fellow in Chest Surgery; and Dr. Robert Dean Mattis, Assistant in Clinical Ophthalmology.

---

The Library is the recipient of a gift of the valuable anatomical library of Dr. Robert J. Terry, who was Professor of Anatomy in the Medical School for many years. It consists of about 393 books on anatomy and allied biological sciences, mostly monographs and other source material, periodicals and over 5,000 reprints, and a collection of portraits of anatomists.

---

The Joint Medical Board recommended to the appropriate Boards the following appointments to the staffs of the hospitals: Dr. Carl Poppe, Fellow in Thoracic Surgery in Barnes and Children's Hospitals; Dr. Leo Wade, Assistant Physician to the Barnes Hospital; Dr. James Bagby, As-



sistant Physician to the Barnes Hospital; Dr. Robert Dean Mattes, Assistant in Clinical Ophthalmology to the Washington University Clinics and McMillan Hospital; Dr. William Barry Wood, Jr., Physician-in-chief to the Barnes Hospital.

---

The Society of Sigma Xi had a joint convocation with Phi Beta Kappa at the Graham Memorial Chapel on Friday morning, May 8, 1942. Dr. George Sarton, Professor of History of Science at Harvard University, addressed the group on the subject of "Science and Letters." On the evening of the same day the annual banquet of the society was held at the Forest Park Hotel following the initiation ceremony. Among the initiates to full membership were Dr. David Goldring, Dr. Paul O. Hageman, Dr. Howard Hildreth, Dr. Francis Hunter, Jr., Dr. William James, Dr. Theodore Sanders, Dr. Frances Love, Dr. Warren Mills, Dr. Jackson Neavles and Dr. Earl Sutherland, Jr.

---

With a view to the eventual integration of the records of the affiliated hospitals, a Subcommittee on Records of the Joint Medical Board has been appointed. The committee consists of Dr. Willard Allen, Chairman, Dr. Theodore Walsh, Dr. Alexis Hartman, Dr. John Lawrence and Dr. Robert Moore.

---

The Executive Faculty has authorized the appointment of a committee to arrange and integrate the second year instruction in clinical medicine. Starting in June, 1942, the courses previously designated as Introduction to Medicine, Introduction to Surgery, Clinical Microscopy, Medical Clinics and Introductory Courses on the Patient-Physician Relationship will be jointly administered by this committee. The committee consists of Dr. Carl Moore, Chairman, Dr. Peter Heinbecker, Dr. Russell Blattner, Dr. John Hobbs, Dr. William F. James, Dr. Lee W. Dean, Jr., and Dr. Samuel R. Warson. The committee has drawn up definite plans for an integrated course and these plans have been approved by the faculty.

---

Dr. William A. Arrowsmith formerly Resident in Medicine at the Barnes Hospital has been awarded a fellowship by the National Research Council for the year beginning in July. He will work with Dr. Carl Moore in the Department of Medicine.

---

The annual session of the Missouri State Medical Association was held in Kansas City on April 27-29. Dr. Robert Elman, Associate Professor of Clinical Surgery, and Dr. William B. Kountz, Assistant Professor of Clini-



cal Medicine, were among the speakers. Dr. Elman's address was on "The Correction of Acute Protein Deficiency in the Treatment of Surgical Shock, Severe Hemorrhage and Burns." Dr. Kountz spoke on "The Recognition and Treatment of Degenerative Heart Disease."

---

The Missouri and Illinois Post-Graduate Committees sponsored a joint clinical conference in Belleville, Illinois, on April 9. Dr. Edmund V. Cowdry, Professor of Anatomy, was among the speakers. His subject was "Geriatrics."

---

Dr. Vilray P. Blair, Professor Emeritus of Clinical Surgery, was a guest speaker at the 76th annual session of the Texas State Medical Association in Houston, May 11-14. He spoke on "Cancer of the Mouth."

---

Dr. P. J. Hanzlik, Professor of Pharmacology at Stanford University School of Medicine, presented a paper on "Oral Bismuth in the Treatment of Syphilis" before the students and faculty on April 28.

---

Dr. Nathan Womack addressed the Medical and Surgical Sections of the Illinois State Medical Society at the annual meeting on May 20.

---

At the regular meeting of the Barnes Hospital Society on April 16 the following officers were elected: Dr. T. K. Brown, President; Dr. J. B. Brown, Vice-President; Dr. William James, Secretary-Treasurer; and Dr. Charles Duden and Dr. James Costen, Councilors.

---

In connection with the accelerated program of the medical school certain changes have been made in the schedule. The clinics formerly held at noon and changed to eight o'clock two years ago are again being held at noon in the amphitheatre of Barnes Hospital. The clinic on Thursday has been dropped and replaced by the Clinical Pathological Conference. The junior clerkships in medicine held during the past two years at the Homer G. Phillips Hospital will be held in the St. Louis City Hospital. The clinics in Dermatology and in Syphilology have been incorporated into the required work of the medical quarter of the fourth year. The lectures in Dermatology have been moved from the fourth to the third year.

---

In order to integrate the teaching of syphilis, a committee under the chairmanship of Dr. Malcolm Cook has been organized. The lectures in the third year in Medicine, Neuropsychiatry, Dermatology and Pediatrics have been rearranged and integrated so that a systematic course on syphilis



will be given in a period of six weeks at the end of the second trimester and at the beginning of the third trimester. These lectures will in turn be correlated with the work in the Syphilis Clinic during the fourth year.

---

The Second Robert J. Terry Lecture of the Washington University Medical Alumni Foundation was given by Dr. George Bernays Wislocki, Parkman Professor of Anatomy in Harvard Medical School, on April 22 in the auditorium of the School of Medicine. The subject of Dr. Wislocki's lecture was "The Primate Placenta with Particular Reference to the Trophoblast."

---

The annual Alpha Omega Alpha lecture was given by Dr. A. Purdy Stout, Associate Professor of Surgery at Columbia University College of Physicians and Surgeons and Surgical Pathologist to the Presbyterian Hospital in New York. The subject of Dr. Stout's address was "Recent Developments in Gastric Surgical Pathology."

---

Dr. Paul Cannon, Professor of Pathology at the University of Chicago, addressed the weekly conference of the Department of Otolaryngology on April 23.

---

Mr. Clinton Smith has been appointed Superintendent of the St. Louis City Hospital. He was formerly Administrator-in-Chief of the Grant Hospital in Chicago.

---

The portrait of Dr. David Barr, contributed by his former house officers and staff members, has been hung in the library of the medical school.

---

The Elliott Amphitheatre in the Oscar Johnson Institute and the Amphitheatre of the Department of Pathology have been air-conditioned for the summer months. Most of the lectures and some of the clinics will be held in these rooms and a part of the objection to the operation of the medical school during the summer months in St. Louis will be eliminated.

---

The Department of Medicine will, during the coming year, send two junior students to the Jewish Hospital of St. Louis for their regular work in medicine.

---

As a result of the resignations of many house officers to enter the armed forces, there will be opportunities for the Senior students to serve as Junior Interns in the affiliated hospitals. At present there are 19 places.



The medical staff held its annual picnic at the Pevely Farm on Saturday afternoon, May 23.

---

On National Hospital Day, May 12, ground was broken for the new building of the St. Louis County Hospital. This building will house the laboratories and offices of the St. Louis County Health Department and provide needed hospital beds for the County Hospital.

---

Dr. French K. Hansel, Associate Professor of Clinical Otolaryngology, was a guest lecturer for a post graduate course in Allergy given at the University Hospital, Ann Arbor, Michigan, May 11-15.

---

Dr. Gordon H. Scott, Associate Professor of Cytology, has been appointed Professor of Anatomy at the University of Southern California.

---

Dr. Leo Wade has been appointed Adviser to Students on Internships for the coming year.

---

Dr. Arthur Proetz, '12, Professor of Clinical Otolaryngology, has been elected secretary of the American Laryngological Association at its recent meeting in Atlantic City.

---

Dr. Ernest Sachs, Professor of Clinical Neurological Surgery, was elected president of the American Neurological Association at its meeting in Chicago in the early part of June.

---

Diagnosis and Treatment of Tuberculosis in Children. J. V. Cooke: M. Clin. North America, Vol. 26: 575-594, March, 1942.

An extensive and lucid discussion of diagnosis and treatment of tuberculosis in children is presented as a different disease from that in adults because the usual manifestations in children are so different. The etiology, pathogenesis and histogenesis as well as diagnosis, prognosis and therapy of the infantile type, juvenile type and adult type of tuberculosis in childhood are considered.



## Faculty and Alumni in National Defense

There have been a number of changes in General Hospital No. 21 during the past few weeks. Dr. Eugene Bricker has been detached and sent to Washington. Dr. Lawrence M. Shefts has been detached and stationed at the Lawson General Hospital in Atlanta. Dr. Stanley F. Hampton has been detached and assigned to Kelly Field, Texas. Nineteen of the medical and administrative officers have been organized into a separate unit to be known as Station Hospital No. 21. The Washington University men in this new unit include Major Franklin B. Walton, Major Stanley Harrison, Capt. Bruce C. Martin, Capt. Joseph J. Gitt, Capt. A. H. Conrad, Jr., Capt. Harold Cutler, Lt. Robert Anschuetz, Lt. John R. Powers, Lt. Edgar Keyes, Lt. Henry Schwarz, III, Lt. David N. Kerr, Lt. Jerome R. Cook, Lt. William C. Stahl, Lt. Bart White, Lt. James R. Rose, and Lt. Carl M. Lattner. These men reported to Fort Bragg, N. C. on Monday, June 15.

---

Dr. Frank Bradley, Superintendent of Barnes Hospital and Assistant Director for the Emergency Medical Service of the O. C. D. in St. Louis, made a flying trip to Oklahoma on May 1 in order to survey the activities of the O. C. D. in connection with damage from the recent tornado.

---

In order to fill the needs of the Army and Navy, and to care adequately for the civilian population, the Government has requested that 54,000 student nurses be enrolled during the year 1942-43. To assume our share of responsibility in this plan, certain changes in the established routine have been necessary at the Washington University School of Nursing. In 1940, we admitted 43 students to the School of Nursing. This was increased to 62 during the past year and in 1942-43 we plan to take in 75 students. We think that it will be possible to do this without lowering, in any way, our standards because there seems to be an increased number of well qualified applicants. This may be due to the splendid publicity of the Nursing Organizations, and to increased interest in nursing as a definite part of the war effort. In order to accommodate 71 students, it will be necessary to take in two or possibly three classes during the year. Since this would be an impossibly heavy load on the Medical School, it was decided to install a science laboratory in the Nurses' Residence, and to have the basic sciences taught by a nurse instructor. The content of the courses will not be as rich as heretofore, but with the generous help and cooperation of the Medical School Faculty, which has been so kindly promised us, we hope that the change will not be too detrimental. For the "duration" then, the teaching



of the basic sciences of Anatomy, Physiology, and Microbiology has been transferred to the School of Nursing. Mrs. Freiberg will continue, as usual, to give the courses in Chemistry but will use the laboratory in the School of Nursing.

---

Dr. Robert Mueller, '17, is acting as Chairman of the Missouri State Board of Procurement and Assignment. This board, as in other states, is concerned with the problem of maintaining a balance of doctors between the civilian population and the armed forces. In a city the size of St. Louis, it is estimated that between 400-500 physicians may be sent to the Army and Navy without seriously endangering the health of the civilian population. Service on the board is voluntary and Dr. Mueller is spending about two-thirds of his time on this work. Funds and supplies are furnished by the Missouri State Medical Association. In the last war Dr. Mueller was Battalion Surgeon to the Sixth Regiment of the Second Division of Marines and was in France for over 18 months.

---

Due to the unprecedented national emergency now facing us, the purchase of supplies in this year of 1942 is most difficult. Not only from the standpoint of securing the items which are desired, but the matter of transportation has made deliveries far behind old schedules. Hospital supplies in particular are very much in demand, since the Government is now the biggest buyer, and they quite naturally must come first. The situation at Barnes Hospital has caused us to do two things; first, build up an extremely large inventory of the supplies most difficult to secure. Second, to preach conservation of these supplies to all our staff and personnel. Mr. Harry C. Dunham, Business Manager of the Barnes Hospital states that we have not been entirely successful in either of these two presumed answers to the present difficulty. First, it is not possible to get enough of the critical supplies to last for the duration. Second, the turnover in personnel is so rapid at present that their education on the conservation of supplies is never completed. Some substitutes may soon be used. At first, however, they will not be of the quality nor as durable as our present equipment. As an example, plastic will undoubtedly replace many of the items now made from hard rubber, but until production can be built up to a much larger scale, we will have to try and get along with what we already have on hand.

It is the firm belief of Mr. Dunham that we are faced with a long hard pull; but if we pull together, it will lighten the load for all of us, and make the going through these difficult times much easier.



## News of Alumni

The annual banquet of Washington University Medical Alumni Association was held on Saturday, May 30, at the Hotel DeSoto. One hundred and eighty-two attended, and the graduating class were guests. Dr. Charles Stone welcomed the members of the Senior Class and the response was given by Dr. C. Barber Mueller, Class President. Short congratulatory addresses were given by Chancellor Throop and Dean Shaffer. Dr. Louis Jorstad as Chairman of the Nominating Committee recommended that the present officers be retained for the coming year, and that Dr. Rogers Deakin be appointed Acting Secretary to assume the duties of Dr. James Bagby who is on active duty in the Navy. After dinner entertainment was supplied by members of the Senior Class in the form of three very clever skits which proved highly amusing and brought to light some unusual ability in the art of impersonation.

---

May 30, 1942.

The nominating committee of the Washington University Medical School Alumni Association makes note of the fact that our Secretary-Treasurer James Bagby has entered the service of our Government. Of 12 members of the executive committee 4 are in the service, one whose term expires in 1944, 3 whose terms expire in 1943.

We recommend therefore, that the present officers be retained for another year,—namely Charles A. Stone as president, Theodore P. Brookes and Leslie C. Drewes as vice-presidents, James W. Bagby as secy.-treas., with the addition of Rogers Deakin as Acting Secy.-treas.

We recommend further, that the members of the executive committee whose terms expire this day be elected for another three year term. These are,—V. P. Blair, L. B. Harrison, Theodore Hanser, and Louis H. Jorstad.

Respectfully submitted,

*Claude Pickrell,*  
*Theodore Brookes,*  
*Louis H. Jorstad,*  
Nominating Committee.



1922

J. B. Costen, '22, Assistant Professor of Otolaryngology at Washington University, was the guest speaker at the April 27 meeting of the Cincinnati Society of Eye, Ear, Nose and Throat. The subject of his lecture was; "Reflex Irritative Effects Occurring in Disturbed Function of the Temporo-Mandibular Joint."

1926

Lt. Col. George S. Littell has been with American Expeditionary Forces outside the Continental United States since January.

1929

William S. George holds the rank of Captain in the Army Medical Corps and is stationed at Camp Merriam, San Luis Obispo, Calif.

1930

Frederick Lee Lieboldt was selected by the University of Arkansas as the recipient of an honorary Phi Beta Kappa membership.

1932

Captain Ralph M. Stuck is stationed at Letterman General Hospital, San Francisco, Calif.

1934

Mary M. Schmeckeber is practicing pediatrics in San Francisco, Calif.

1935

Major Paul C. Sheldon is on duty with the 56th Medical Battalion at Fort Lewis, Wash. Mrs. Sheldon, the former Catherine E. Niemeier of St. Louis, and their three and one-half year old son, Paul, Jr., are with him there.

Captain Charles L. Langsam is stationed at Camp Davis, N. C.

1936

Captain Robert Wilson Kelley, who is stationed with General Hospital 21 at Fort Benning, Ga., and Helen Van Matre were married on June 2.

1937

Howard Wm. Lytle, Lt. (jg) is "somewhere in the Pacific." Lt. Lytle was married in 1940 to Margaret Thomas of Gilroy, California, and they are very proud of their daughter, born July 15, 1941.

Herman Erlanger was resident physician at the Peter Bent Brigham Hospital in Boston, Mass. until called to active duty as Captain in the 105th General Hospital.

1938

Captain Harvey D. Bingham is stationed at Fort Lewis, Wash.

Captain Malvern T. Bryan's address is Station Hospital, A. P. O. 846, c/o Postmaster, New York City, N. Y.

Hyman Wm. Gierson is stationed at March Field, Calif.

The marriage of Lieut. (jg) Robert D. Brookes and Mary Muir Scott was solemnized on April 2 in the Fifth Avenue Presbyterian Church in New York. Lieut. Brookes is the son of Dr. Theodore Brookes, '09.

Lawrence M. Kotner is at the Station Hospital, Fort Francis Warren, Cheyenne, Wyo.

Lt. Charles E. Windus' address is B-301986, 11th Material, 8th Air Base Group, A. P. O. Box 1111, c/o Postmaster, San Francisco.

1939

Oscar F. Foseid is with the Nabers Clinic in Morristown, Tenn.

Lt. Vilray P. Blair, Jr. and Ruth Schifflin of Texarkana, Ark., were married on May 31. Lt. Blair is the son of Dr. Vilray P. Blair, '93.

Bartholomew Passanante, Lt., M. C., was recently transferred from Fort Leonard Wood, Mo., to the 6th Surgical Hospital in Fort Knox, Kentucky.

Captain Robert M. Hardaway, III, is stationed "somewhere in the Pacific."



George J. Hess has located in Bunker Hill, Ill., and is doing general practice there.

1940

Albert A. Ackerman is interning at the Grady Hospital in Atlanta, Ga.

1941

Sylvan Altshiller Hertz and Dr. Ruth Rabinovitch, '40, Women's Medical College of Pennsylvania, were married on April 4 in New York City.

Nelson W. Johnson is interning at

San Francisco Hospital in San Francisco.

1942

Hiraku Ishida has been appointed intern at the Missouri Baptist Hospital in St. Louis.

Robert Benjamin Stortz and Mary Anthony Boyd were married on June 3. They will live in Fresno, California, where Dr. Stortz will intern at the General Hospital of Fresno during the coming year.

---

Experimental Obesity in the Dog. Peter Heinbecker and H. L. White:  
Proc. Sec. Exper. Biol. and Med., Vol. 49: 324-327, March, 1942.

Obesity in dogs produced by experimental operations on the hypophysis and hypothalamus has been studied for 5 years. The animals were kept in metabolism cages and observed for weight and urinary excretion. Limited and unlimited amounts of dog chow and horse meat were weighed and fed to the animals during the experiments. It was noted that obesity in the dog results from partial destruction or retrograde degeneration of the paraventricular hypothalamic nuclei. Destruction or denervation of the neurohypophysis and partial destruction or retrograde degeneration of the caudal paraventricular nuclei result in marked obesity. Ablation of the pars distalis does not result in significant obesity. Marked adiposity develops with an intact pars distalis and partial destruction or degeneration of the supraoptic and paraventricular nuclei. The authors conclude that a lack or marked lessening of secretion of the neurohypophysis may aid in fat storage in the presence of a diminution in the number of cells of the caudal portion of the paraventricular nuclei.



## Student News

For the past four months a tea has been held in the student lounge on Monday, Wednesday, and Friday afternoons for the faculty and students. It is hoped that this will be continued, especially during the summer months. The faculty wives have served as hostesses.

The annual A. O. A. dinner was held on April 30, 1942 at the University Club under the sponsorship of Dr. Ernest Sachs. Of the forty people attending, fourteen were initiates. At a business meeting held before the dinner the officers for the coming year were elected. Dr. Willard Allen was elected President; Dr. Sam Soule, Vice-President; Dr. C. Barber Mueller, Secretary; and Dr. Arthur Strauss, Councilor. Dr. Earl C. Padgett, '18, was elected to the society. Dr. Stout was guest of honor. After dinner speeches were held at a minimum so the dinner was a success.

A party for the seniors, their parents, and faculty was given at the Medical School on the evening of June 1. The group met in the auditorium and heard an interesting address by Dr. Edgar Allen, Professor of Anatomy at Yale University. Dr. Allen spoke on "Epochs in the Life of a Medical Student." Following this the group ad-

joined to the lawn to enjoy the rest of the evening with refreshments and the music of Herb Mahler's Orchestra. Dr. Ethel Ronzoni was responsible for the decorations. Acting as hostesses were Mrs. P. A. Shaffer, Mrs. Joseph Erlanger, Mrs. Evarts A. Graham, Mrs. Sherwood Moore, Mrs. E. V. Cowdry, Mrs. J. Bronfenbrenner, Mrs. Carl F. Cori, Mrs. J. V. Lawrence, Mrs. Robert Moore, Mrs. Harry Alexander, Mrs. Frank Bradley and Mrs. W. B. Parker.

The local chapter of Nu Sigma Nu has established two prizes to be awarded by a committee to the outstanding man in the second year class and in the first year class. The committee consists of Dr. Philip Shaffer, Chairman, Dr. Arthur Gilson, Dr. Philip L. Varney, Dr. Cecil Charles and Dr. Robert A. Moore. The awards will be announced in the near future.

The Alexander Berg Prize in Bacteriology was awarded to Mr. Harry Lawler of the second year class.

The Howard McCordock Prize in Pathology was awarded to Mr. James G. Owen of the second year class.

The Alpha Omega Alpha prize for student research was awarded to Dr. Royal Brown, '42, for his investigations on maternal health. Nine papers were submitted in the competition.

---

Massive Repairs of Burns with Thick Split-Skin Grafts. James B. Brown and Frank McDowell: *Ann. Surg.*, Vol. 115: 658-674, April, 1942.

The fundamentals of general care of the individual patient and avoidance of pain are stressed. Most patients can supply enough skin for their repair. The technique of the grafts is discussed and the care of the wounds is described in detail.



## In Memoriam

- Edwin A. Baumgartner, '19, Newark, N. J.; aged 54; died March 15.  
Gustavus Bock, '82, Smithton, Ill.; aged 83; died February 6.  
G. Grant Bragg, St. L. '89, Huntsville, Mo.; aged 75; died February 9.  
John Tavner Beale, St. L. '76, Lovelock, Nev.; aged 89; died February 28.  
William J. Benner, '03, Anna, Ill.; died March 3, 1941.  
Given Campbell, '89, St. Louis, Mo.; aged 75; died April 20.  
Oliver H. Campbell, '99, St. Louis, Mo.; aged 70; died May 27.  
Ernest A. Dieckmann, '97, Keysport, Ill.; aged 73; died March 10.  
Lee E. Fisher, St. L. '95, Hannibal, Mo.; died August 5, 1941.  
Calvin F. Forbis, St. L. '91, New Hampton, Mo.; deceased.  
Herman A. LaForce, '16, Joplin, Mo.; aged 56; died April 1.  
H. C. Gault, '82, St. Clair, Mo.; died March 7.  
Charles S. Sample, Jr., '32, Mobile, Ala.; aged 37; died March 8.  
E. J. Viedt, St. L. '93, St. Louis, Mo.; died April 1.  
Rasselas Wagner, M. M. '79, Los Angeles, Calif.; aged 86; died February 18.



# ALUMNI ASSOCIATION OF THE WASHINGTON UNIVERSITY MEDICAL SCHOOL

January 1, 1942 - May 25, 1942

Cash, First National Bank, St. Louis, Mo., January 1, 1942.....	\$1,911.25
Cash on Hand, January 1, 1942 .....	2.38

## *Receipts*

Banquet Fund .....	\$ 17.50
Loan Payments .....	115.00
Dues .....	448.00
Total Receipts .....	580.50
<hr/>	
Total .....	\$2,494.13

## *Disbursements*

Herbert C. Harding (student loan) .....	\$100.00
Washington University .....	450.00
Scholarship Fund .....	30.00
Eden Publishing House .....	72.78
Postage .....	14.00
Office Supplies .....	.85
Miss Hunt (Loan) .....	85.00
Total .....	752.63
<hr/>	

	\$1,741.50
Cash on Hand, May 25, 1942 .....	28.93
<hr/>	
Cash, First National Bank, May 25, 1942 .....	\$1,712.57



# WASHINGTON UNIVERSITY

---

George R. Throop, Ph.D., LL.D., Bridge Chancellor

---

Walter E. McCourt, A.M., Assistant Chancellor

---

The College of Liberal Arts

Frank M. Webster, Ph.B., Acting Dean

The School of Engineering

Alexander S. Langsdorf, M.M.E., Dean

The School of Architecture

Alexander S. Langsdorf, M.M.E., Dean

The School of Business and Public Administration

William H. Stead, Ph.D., Dean

The Henry Shaw School of Botany

George T. Moore, Ph.D., Director

The School of Graduate Studies

Richard F. Jones, Ph.D., Acting Dean

The School of Law

Joseph A. McClain, Jr., A.B., LL.B., J.S.D., LL.D., Dean

The School of Medicine

Philip A. Shaffer, Ph.D., Dean

The School of Dentistry

Benno E. Lischer, D.M.D., Dean

The School of Nursing

Louise Knapp, B.S., A.M., Director

The School of Fine Arts

Kenneth E. Hudson, B.F.A., Director

The University College

William G. Bowling, A.M., Dean

The Summer School

Frank L. Wright, A.M., Ed.D., Director

Mary Institute, a preparatory school for girls, located at Ladue and Warson Roads, is also conducted under the charter of the University.

---

Note: Those desiring information concerning any of the divisions listed above should write to the Dean or Director concerned.